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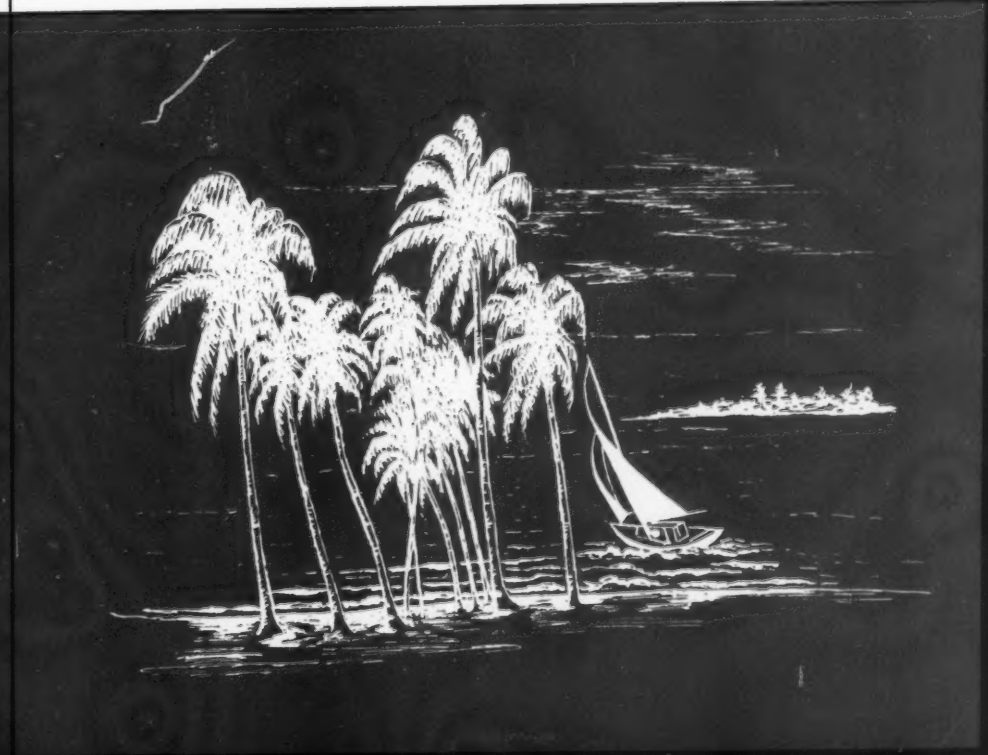

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VOLUME XLVIII, No. 6

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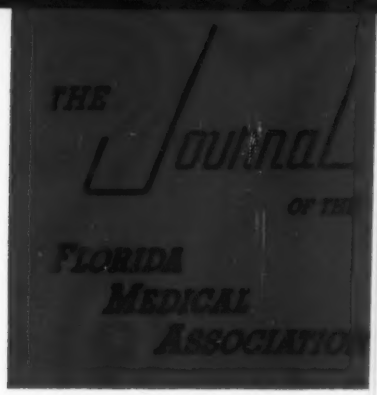

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Published monthly at Jacksonville, Florida. Price $5.00 a year: single numbers, 50 cents. Address Journal of Florida Medical Association, P.O. Box 2411, 735 Riverside Ave., Jacksonville 3, Fla. Telephone EL 6-1571. Accepted for mailing at special rate of postage provided for in Section 1103, Act of Congress of October 3, 1917; authorized October 16, 1918. Entered as second-class matter under Act of Congress of March 3, 1879, at the post office at Jacksonville, Florida, October 23, 1924.

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THE JOURNAL
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Volume XLVIII, No. 6, December, 1961

Radioisotopes in Diagnosis

CHARLES A. OWEN JR., M.D.
ROCHESTER, MINN.

At the end of World War II, radioactivity meant only radium and radon to the medical profession. By 1950, radioiodine and radiophosphorus were added, the former for the diagnosis and treatment of thyroidal disease, the latter for the treatment of polycythemia vera.

The past decade has seen a remarkable increase in the medical use of radioisotopes. To some extent, this increase has been in the field of therapy—the cobalt "bomb," radiogold and chromium phosphate colloids. Mainly, however, the expansion has been along diagnostic lines.[1] Whether completely justified or not, the following procedures are practically "routine" tests today: measurement of blood volume with radioiodinated human albumin (RISA), quantitation of survival of erythrocytes with radiochromium, estimation of gastrointestinal bleeding by use of radiochromium, evaluation of pernicious anemia with radiocobalt-labeled vitamin B_{12}, assessment of hepatic function by use of radioiodinated rose bengal, evaluation of malabsorption syndromes by means of radioiodinated fat, and measurement of the thyroidal status with radioiodine.

Technical variations of some of these procedures are finding use, some of the tests may be less valuable than once thought, and newer methods are being explored. These factors will be discussed briefly.

Thyroidal Disease

RADIOIODINE UPTAKE BY THE THYROID.—Despite the accuracy of the test based on the uptake of radioiodine (I^{131}) measured six to 24 hours after an oral dose of this radioisotope,[2] about 10 per cent of mildly hyperthyroid patients are missed, as are a greater percentage of mildly hypothyroid patients. In our experience at the Mayo Clinic, the following tests, some of which depend on the pituitary-thyroid relationship, are useful.

TSH TEST.[3]—Primary myxedema may be distinguished from myxedema secondary to pituitary disease by the fact that, in the latter case, thyroidal cells exist but are not functional because of lack of stimulation by the pituitary. The test consists of measuring the uptake of I^{131} before and after an injection of commercial (bovine) thyroid-stimulating hormone (TSH, or thyrotropin). More importantly, the test can distinguish whether a patient receiving desiccated thyroid actually needs it or not. In either case, no uptake of I^{131} will be evident; after an injection of TSH, only the patients who have normally functioning thyroids will concentrate the I^{131} (fig. 1).

T_3 TEST.[4,5]—Replacement of the metabolic needs of the body with L-triiodothyronine (T_3) results in a sharp decrease in the uptake of I^{131} if the thyroid is under pituitary control but not in the case of Graves' disease. L-triiodothyronine is inexpensive, and administration of 50 micrograms a day for only three or four days is required for the test (fig. 2).

IODIDE TEST.[6]—A dose of 1 to 2 mg. of iodide (the sodium or potassium salt) will sharply reduce the uptake of I^{131} by thyrotoxic thyroids, but this dose has little effect on normal thyroids (fig. 3).

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From the Section of Biochemistry, Mayo Clinic and Mayo Foundation, Rochester, Minn.
Read before the Florida Medical Association, Eighty-Seventh Annual Meeting, Miami Beach, May 27, 1961.

ERYTHROCYTIC UPTAKE OF T_3.—This test is particularly appealing, since it is designed to evaluate thyroidal function without exposing the patient to radioactivity.[7] Instead, the patient's serum is mixed in a test tube with L-triiodothyronine labeled with I^{131}. Since patients who have high levels of protein-bound iodine (PBI) have practically saturated the thyroxine-combining capacity of their serum, most of the added hormone is free to attach to erythrocytes subsequently added to the mixture. Patients with low values for PBI can bind a large fraction of the added I^{131}-triiodothyronine to their serum, so that little of the radioactivity is transferred to the added erythrocytes. This test is so sensitive to technical variations that it has not found wide acceptance as yet.

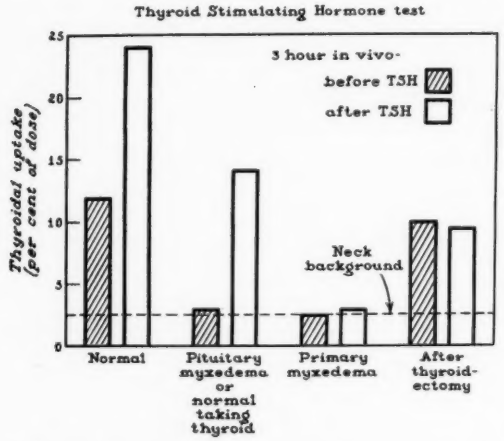

Fig. 1.—Response of thyroid to subcutaneous injections of 10 units of bovine TSH. The uptakes of I^{131} were measured three hours after oral doses of I^{131}. "Normal" persons had a normal uptake before TSH and an exaggerated response afterward, suggesting that the thyroid is not maximally stimulated by TSH under normal conditions. Patients with secondarily suppressed activity (inadequate pituitary function or administration of exogenous thyroidal hormone) had no uptake of I^{131} before and a normal uptake after TSH. Patients lacking any functional thyroidal tissue (primary myxedema) could not be stimulated by TSH. The uncommon fourth type of response apparently reflects a limited number of thyroidal cells all functioning maximally, so that no further response to TSH is possible. (Reproduced with the kind permission of the publishers from Owen.[1])

BERSON'S TEST.—A straightforward test of thyroidal uptake requiring only 30 minutes has been devised.[8] A continuous record of radioactivity is made over the thyroid after the intravenous injection of I^{131}. The appearance of the curves is quite distinctive in the various states of activity of the thyroid (fig. 4); the shapes of the curves may be reduced mathematically to an expression of the rate of clearance of I^{131} from the plasma in milliliters per minute.

Hematology

ERTHROCYTIC SURVIVAL.[9]—The span of life of erythrocytes can be evaluated efficiently by the technically simple process of labeling a patient's own erythrocytes with radiochromium (Cr^{51}). It is not commonly recognized that these labeled cells may disappear from the circulation

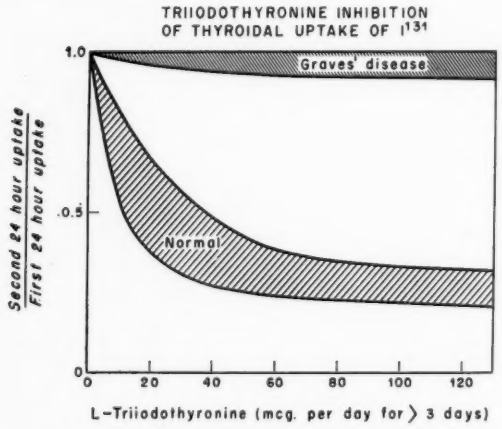

Fig. 2.—Comparison of inhibition of thyroidal uptake of I^{131} in normal persons and in patients with Graves' disease after varying doses of L-triiodothyronine given for three to five days. (Illustration drawn from data published by McConahey and Owen.[5])

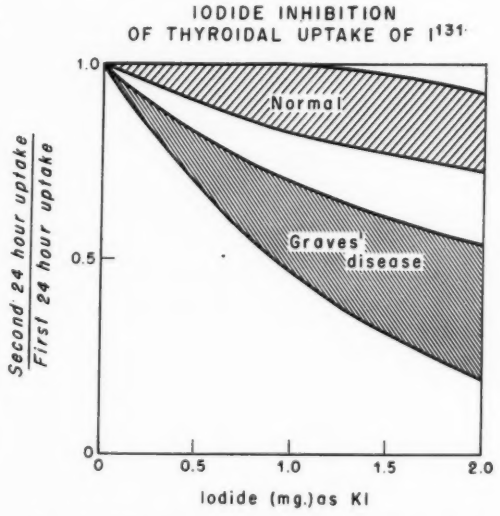

Fig. 3.—Comparison of inhibition of thyroidal uptake of I^{131} in normal persons and in patients with Graves' disease after varying oral doses of potassium iodide. (Illustration drawn from data published by Feinberg and associates.[6])

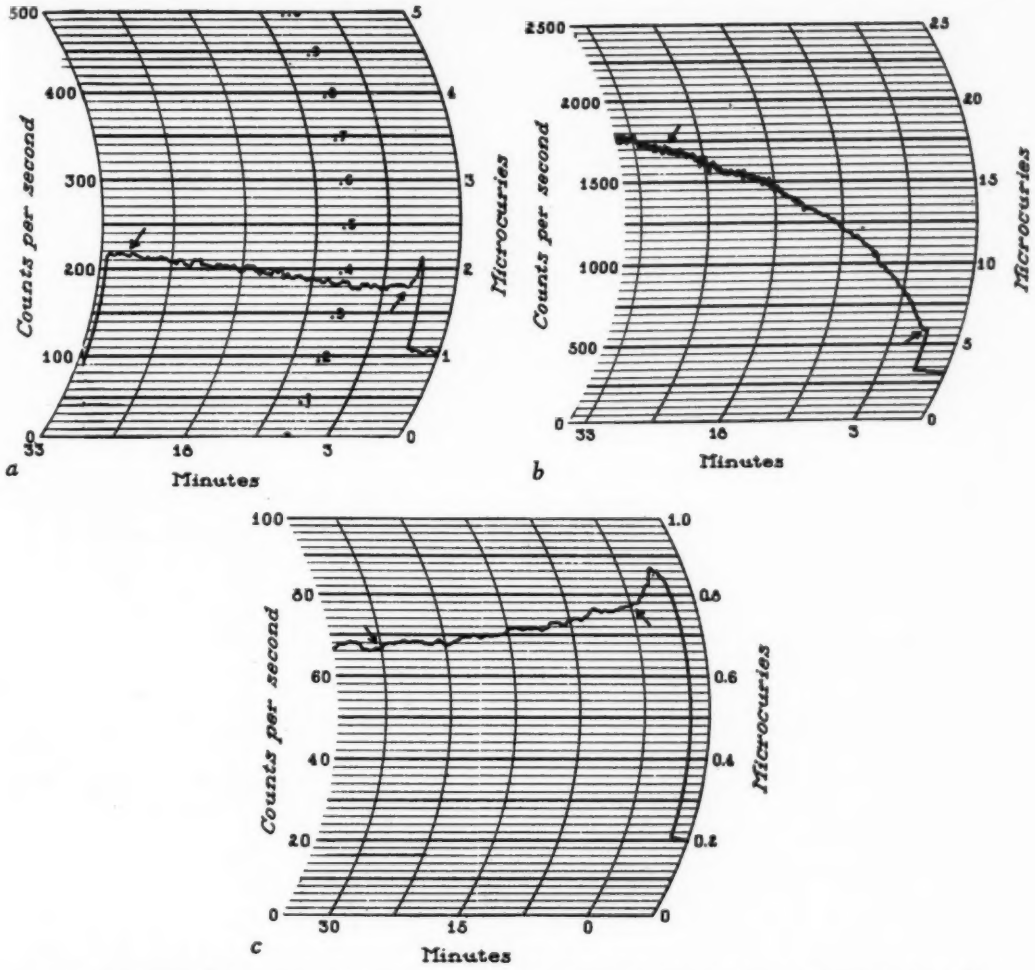

Fig. 4.—Continuous recordings (right to left) of I^{131} in thyroidal region after 25-microcurie dose given intravenously. *a.* Normal state. *b.* Hyperthyroidism. *c.* Hypothyroidism. (Reproduced with the kind permission of the publishers from Owen.[1])

by hemorrhage as well as hemolysis (fig. 5). Since a site of hemorrhage that often is overlooked is the intestinal tract, it is a wise precaution to assay stools for Cr^{51} if the circulating Cr^{51} is disappearing at too rapid a rate.

Erythrocytic Metabolism.—By differential counting, one may assess the erythrocytic survival with Cr^{51} and simultaneously evaluate erythrogenesis with radioiron (Fe^{59}). With the latter isotope, the intestinal absorption of iron may be quantitated if the iron is given orally;[10] if the isotope is given intravenously, it is possible to measure the turnover of plasmatic iron, determine the organ in which it concentrates and evaluate the efficiency of erythrocytic synthesis.

Schilling's Test.[11,12]—This test was developed to aid in the diagnosis of pernicious anemia, but it has turned out to have the added advantage of measuring defects of intestinal absorption fairly well. A dose of vitamin B_{12} labeled with radiocobalt is given orally. Two hours later, a large dose (1 mg.) of nonradioactive vitamin B_{12} is given subcutaneously; most of this is promptly excreted in the urine, carrying along about one third of any of the radioactive vitamin B_{12} that has been absorbed. Negligible radioactivity appears in the urine if the patient lacks intrinsic factor (pernicious anemia) or if he has an absorptive defect (such as sprue). These two states may be differentiated by repeating the entire test

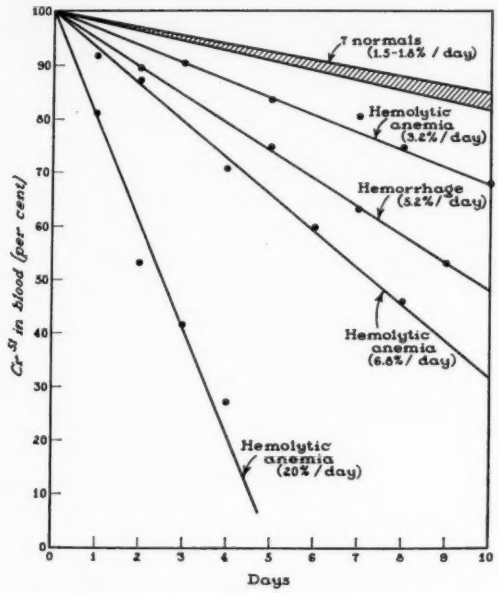

Fig. 5.—Varying rates of disappearance of Cr^{51}-labeled erythrocytes from circulation of four patients and seven controls. Note that the curve of the one patient with pronounced intestinal hemorrhage and no hemolytic component is indistinguishable from the curves of the three patients with hemolytic anemia. (Reproduced with the kind permission of the publishers from Owen.[1])

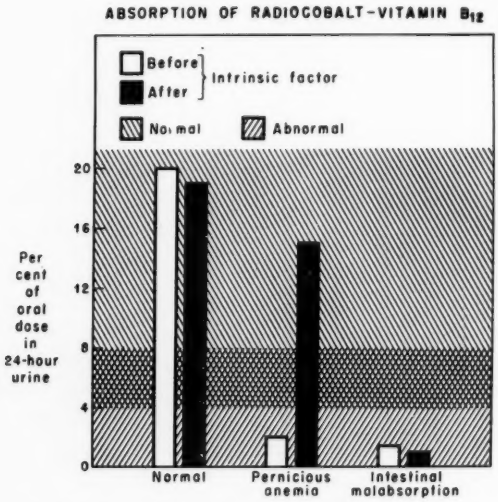

Fig. 6.—Schilling's test. This shows the urinary excretion of radiocobalt in a normal person, one with pernicious anemia and one with sprue after an oral dose of radioactive vitamin B_{12}. The normal person did not respond to added intrinsic factor because absorption of vitamin B_{12} was already maximal; the patient with sprue was unable to absorb the vitamin despite the presence of intrinsic factor; the response of the patient with pernicious anemia is entirely characteristic. (Illustration drawn from data published by Bull and associates.[12])

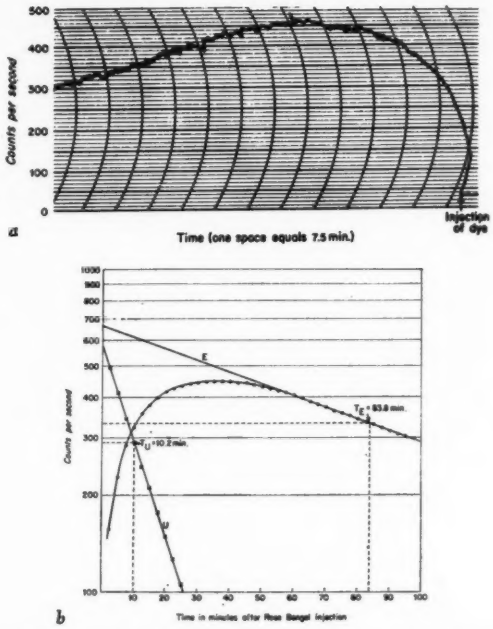

Fig. 7.—Hepatic uptake and excretion of rose bengal-I^{131} measured externally. *a*. Actual tracing (right to left) after intravenous administration of dye. *b*. Tracing reproduced (left to right) on semilogarithmic paper, with calculations of hepatic uptake (T_U) and excretion (T_E). In this case, the dye was concentrated by the liver at a rate of 6.8 per cent per minute and excreted at a rate of 0.8 per cent per minute. (Reproduced with the kind permission of the publishers from Moertel and Owen.[14])

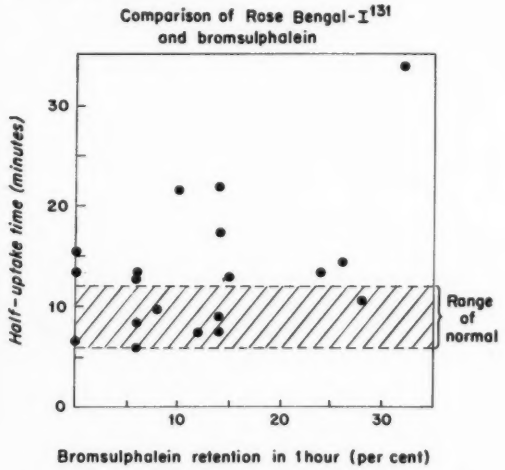
Comparison of Rose Bengal-I131 and bromsulphalein
Half-uptake time (minutes)
Range of normal
Bromsulphalein retention in 1 hour (per cent)

Fig. 8.—Comparison of BSP test (retention of BSP in blood one hour after dose of 5 mg. per kilogram of body weight) with hepatic uptake (T_U) of radioiodinated rose bengal (see figure 7). Two patients had abnormal values for rose bengal but normal levels of BSP. On the other hand, seven patients, all with abnormal retention of BSP, exhibited normal results with the rose bengal technic. (Reproduced with the kind permission of the publishers from Moertel and Owen.[14])

with the addition of a commercial preparation of intrinsic factor (fig. 6).

Gastroenterology

Two tests employing radioisotopes in the field of gastroenterology have been promoted extensively and accepted fairly widely. After a second look, neither appears to live up to expectations.

I^{131}-Rose Bengal Test of Hepatic Function.[13]—The labeling of rose bengal with I^{131} has made it possible to measure "in vivo" the rate of extraction of the dye by the liver from the blood and the rate of excretion of the dye into the biliary system (fig. 7). By arithmetic manipulation, one can even derive the volume of blood in the liver. Despite these apparent advantages, a carefully controlled study[14] suggested that the classic test employing sulfobromophthalein (BSP) is more precise in the evaluation of hepatic function in nonjaundiced patients (fig. 8).

I^{131}-Triolein Test of Pancreatic and Intestinal Function.[15]—If pancreatic enzymes are lacking in the intestine, fats are poorly absorbed because they cannot be reduced to free fatty acids. Neither free fatty acids nor fats are absorbed well in various malabsorption syndromes. The use of a fat such as triolein labeled with I^{131} appeared to offer an easy technic for evaluating intestinal disease; if it is not absorbed but if labeled oleic acid is, then pancreatic disease is suggested; if neither the fatty acid nor the fat can be absorbed, then the fault apparently lies with the intestine. Unfortunately, the sensitivity of the triolein test is considerably less than that of the quantitative evaluation of stool fats, and this method must be considered useful only if the physician does not have access to an adequate chemistry laboratory[16] (fig. 9).

Localization of Tumors

Despite much effort and many ingenious approaches, the localization of tumors by radioisotopic means has met with only limited success. Supratentorial tumors may be visualized by scanning the head after administration of I^{131}-labeled fluorescein or albumin, or by iodide^{131} itself; more spectacular results have followed use of the positron-emitting isotopes of copper and arsenic. The real clinical problem, however, lies in tumors below the tentorium, and here the isotopic tests have been uniformly unsatisfactory.

Radiophosphorus (P^{32}) does concentrate well in most tumors, as well as in all rapidly growing

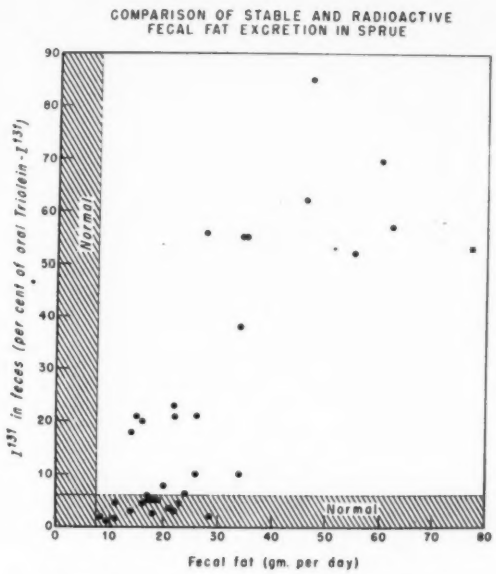

Fig. 9.—Comparison of fecal fat with fecal excretion of I^{131} after oral dose of radioiodinated triolein. The radioactive technic is insensitive in the region of mild steatorrhea (less than 30 Gm. of fat excreted per day). (Illustration drawn from unpublished data of Moertel and co-workers.[16])

tissues, but its beta rays are so weak that only a few millimeters of tissue damp the radioactivity. External counting can be used only for extremely superficial tumors, and most investigators find results of the test with P^{32} clearly positive only when the tumor is clinically obvious. One exception to this pessimistic picture is the use of P^{32} to distinguish nonmalignant retinal detachment from malignant tumors of the eye. Since small Geiger counters can be pressed snugly against the eyeball, the increased uptake by malignant tumors can be quantitated.

Localization of metastatic lesions secondary to carcinoma of the thyroid is often possible because of the penetrating gamma rays of I^{131}. While the presence of metastasis may be suspected by carefully surveying the body with a hand-held radiation detector, scintiscanning technics add to the precision (and expense) (fig. 10).

Urology

I^{131}-Hippuran Renography.[17]—This is one of the newer diagnostic radioisotopic technics, and it holds promise as a useful method for studying renal function and also ruling out renal disease in patients with hypertension. The principle of the test depends on the fact that sodium iodohippurate (Hippuran) is extracted from the blood by the

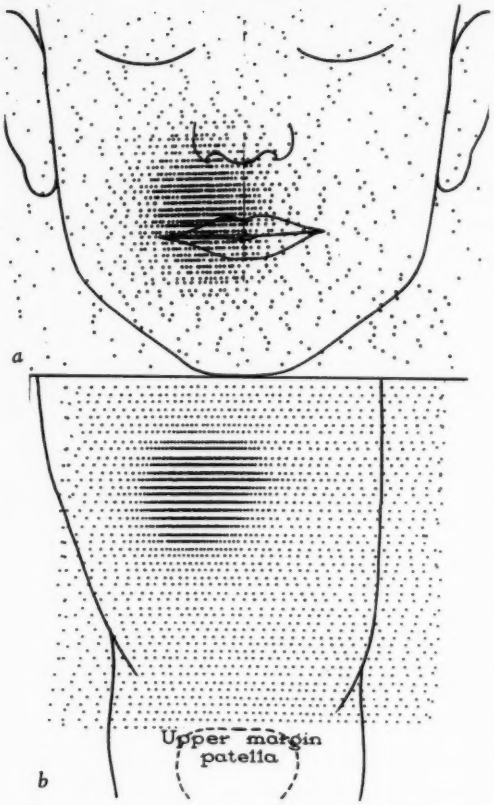

Fig. 10.—Recordings ("scintiscans") of I^{131} localization in metastatic tumors from thyroidal carcinoma. *a.* Metastasis to tonsillar region. *b.* Metastasis to femur. (Reproduced with the kind permission of the publishers from Owen.[1])

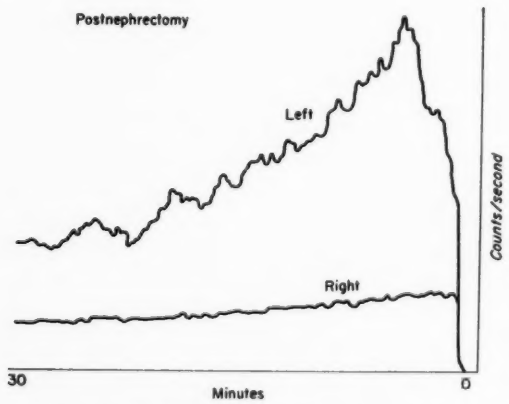

Fig. 11.—Radioactivity over renal regions of back recorded simultaneously by two matched radiation detectors after intravenous administration of I^{131}-Hippuran. The tracings (right to left) show no activity on the right (postnephrectomy) and a hypernormal ("compensatory") uptake on the left. Radioactivity in the kidney decreased as the dye was excreted into the urine. (Data kindly furnished by Dr. W. N. Tauxe, Section of Clinical Pathology.)

kidney and is then secreted into the urine (like the extraction of rose bengal by the liver). The amount of radioactive Hippuran may be measured externally and, if paired counters are used, the function of each kidney may be compared directly (fig. 11). It is likely that the test employing radioactive Hippuran will displace the similar test using radioactive iodopyracet (Diodrast),[18] which is cleared by the liver as well as by the kidneys.

Metabolism of Electrolytes

Since pathologic states involving the heart, liver, kidneys or adrenals may be accompanied by disordered metabolism of water and electrolytes, methods for measuring body water, the intracellular and extracellular spaces, and the distribution of sodium and potassium have been studied extensively. Technics are currently available for measuring body water (with heavy water [D_2O] or radioactive water [$H_2{}^3O$]), body potassium (with K^{42}) and body sodium (with Na^{22} or Na^{24}). None of these technics are ideal, since the measurement of the isotope is complex (deuterium, tritium) or the half-lives are too short (Na^{24} = 15 hours, K^{42} = 12½ hours) or too long (Na^{22} = 2½ years). The availability of more satisfactory isotopes or of simpler methods for their measurement could make these tests extremely useful.

As an aside, one of the few natural radioisotopes present in the body in amounts sufficient to be measured is radiopotassium (K^{40}), which has a half-life of more than 1,000,000,000 years. The body content of potassium can be assessed accurately by an elaborate "whole-body counter," but few of these expensive devices exist.

Conclusion

New radioisotopic tests will be proposed at an increasing rate. Some will prove to be useful and will find their way into the radioisotopic laboratory. Others will be impractical or insensitive or even dangerous radiationwise. To discount all new methods because radioisotopes "are a fad," or to accept uncritically every new proposal, will only retard progress.

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Mayo Clinic.

Newer Methods for the Detection of Congenital Cardiac Shunts

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Standard techniques for the diagnosis of congenital intracardiac and extracardiac shunts have focused on detection of changes in oxygen content in the right heart and pulmonary artery for left to right shunts, and on the detection of systemic arterial oxygen unsaturation for the detection of right to left shunts. Localization of the site of right to left shunting by the oxygen technique has been notoriously poor and based upon inferential circumstantial evidence.

Dissatisfaction has also been expressed with the oxygen method for determination and localization of left to right shunts. Small shunts, up to perhaps 20 per cent of total flow, may readily be missed, since an oxygen stepup in the right atrium of at least 2 volumes per cent as compared to the superior and inferior vena cava is required to diagnose an interatrial septal defect. Increments of 1 and 0.5 volume per cent in the right ventricle and pulmonary artery respectively are required for the diagnosis of an interventricular septal defect and patent ductus arteriosus respectively. The differential diagnosis of interatrial septal defect and anomalous pulmonary venous drainage is virtually impossible by the oxygen content technique unless the catheter tip is passed into the pulmonary vein. Even then radiographic differentiation is often difficult between direct entrance of the tip into the pulmonary vein from the right atrium and indirect entrance from the left atrium, after passage of the tip through an interatrial defect.

The introduction of the indicator dilution technique into diagnostic studies in congenital heart disease has been a great step forward. In our laboratory the oxygen technique has virtually been discarded in favor of the dye dilution technique employing indocyanine green. In actual practice this dye can be used freely to inscribe as

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Read before the Florida Medical Association, Eighty-Seventh Annual Meeting, Miami Beach, May 26, 1961.

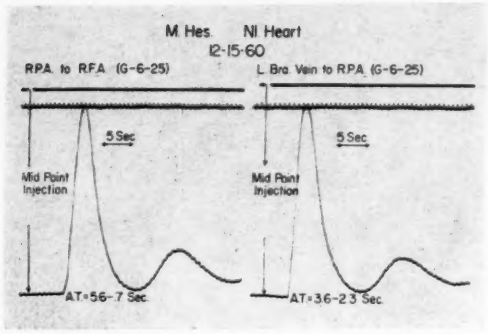

Figure 1

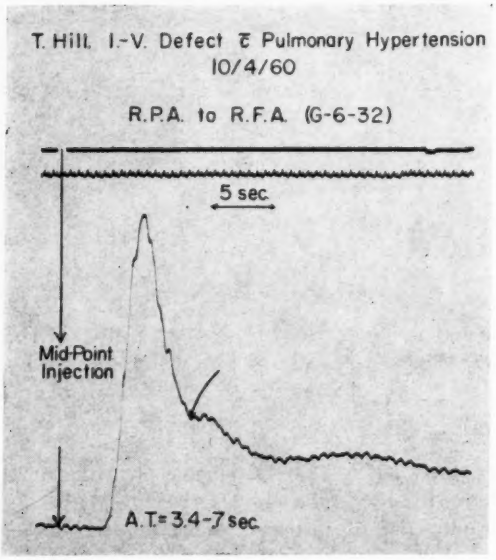

Figure 2a

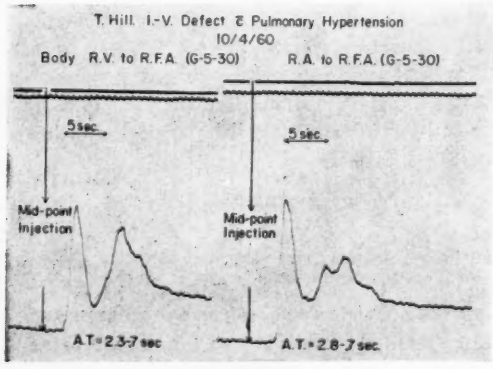

Figure 2b

many curves as desired. We have employed total doses of 2-4 mg./Kg. without any reaction. This dosage level has permitted inscription of up to 25 curves per patient. Good dye curves can be obtained with as little as 3 mg. per curve in the adult. Since indocyanine green has its maximum absorption point at 800 MU, dye dilution curves can be obtained from within the right heart chambers as well as from systemic arteries. At 800 MU the transmission of light by oxygenated and reduced hemoglobin is similar and variations in oxygen saturation do not distort the recorded dilution curve as is the case when Evans Blue (maximum absorption point 625 MU) is employed. The sites of dye injection and dye curve inscription may thus be varied at will.

Indicator Dilution Technique

Normal dye dilution curves are shown in figure 1. To the left, dye has been injected into the right pulmonary artery and a curve inscribed from the right femoral artery. To the right the injection site is the left brachial vein and the inscription site the right pulmonary artery. The appearance time (interval from the mid-point of the injection period to the appearance of dye) is 5.6-0.7 sec. for the former curve. The 0.7 sec. correction is for the dead space of the sampling system. The longer 2.3 sec. correction time for the latter curve is due to the 100 cm. length of the cardiac catheter. The characteristics of the normal curve are readily discernible. There is an initial rapid upstroke and a rapid downstroke reaching nearly to the base line. The recirculation curve is readily seen.

Two abnormal types of dye dilution patterns may develop as a result of cardiac shunts. If a left to right shunt is present, a portion of the left atrial or left ventricular or aortic blood (and dye) passes directly to the periphery and a portion recirculates through the lung and reaches the periphery later than it ordinarily would. As a result the downstroke of the curve is interrupted (arrow, fig. 2a). The total height or amplitude of the curve is also decreased. The appearance time is normal for the individual patient, as in figure 2a, a young boy with an Eisenmenger complex. The injection site is the right pulmonary artery and the sampling site the femoral artery.

If a right to left shunt is present (fig. 2b), part of the right heart blood (and dye) passes through the lung to the left heart and periphery. Another portion of the right heart blood, however, passes directly to the periphery, bypassing the

lungs. As a result the appearance time is shortened and a double-humped curve results (fig. 2b). The injection sites are the body of the right ventricle and the right atrium. The appearance time is shorter from the right ventricle (fig. 2b) than from the pulmonary artery (fig. 2a); this is the reverse of the normal appearance time relationship. The appearance of a double-humped curve from the right ventricle but not from the pulmonary artery localizes the source of the right to left shunt to the right ventricle. If a double-humped curve appeared from the right atrium but not the right ventricle, the site of the right to left shunt would of course be the right atrium.

Localization of the right to left shunt in a patient with patent ductus arteriosus with pulmonary hypertension and reversal of the shunt is illustrated in figure 3. Dye injection into the distal left pulmonary artery with simultaneous sampling from the right femoral and brachial arteries reveals relatively normal curves (fig. 3a). On the other hand, dye injection into the main pulmonary artery with sampling from the same two systemic arteries reveals a shortened appearance time from the femoral but not the brachial artery (fig. 3b). The former curve is also double-humped, indicating a right to left shunt to the femoral but not the right brachial artery. The diagnosis of patent ductus arteriosus with reversal of the shunt is thus established.

Interruption of the downstroke of a systemic arterial dye curve (fig. 2a) establishes the diag-

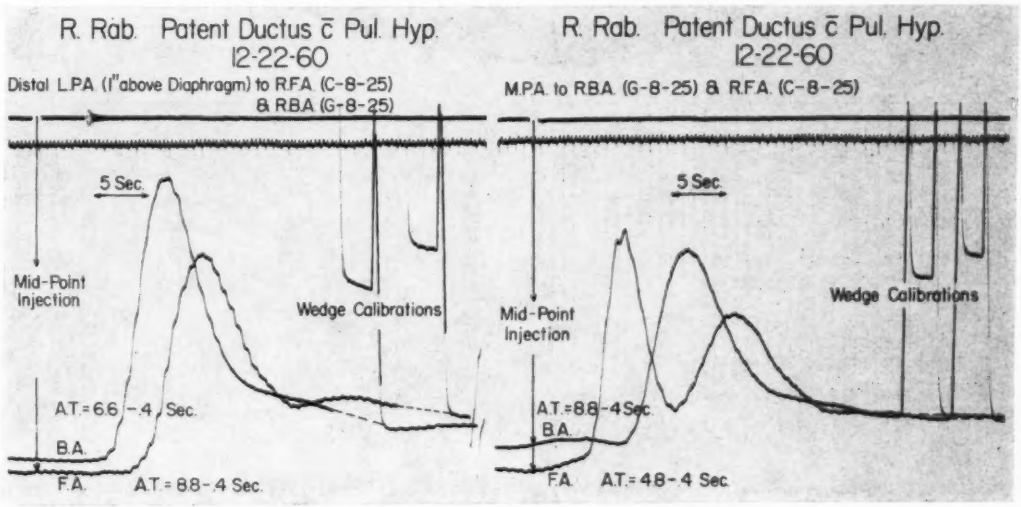

Figure 3

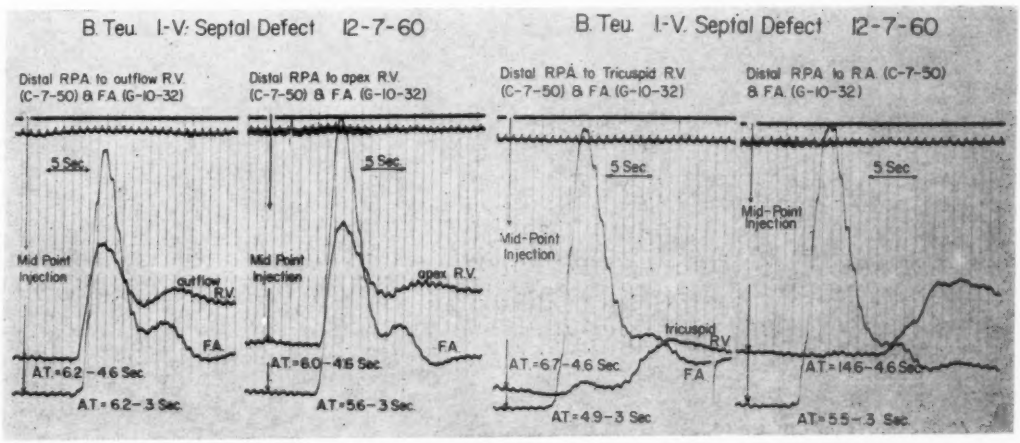

Figure 4

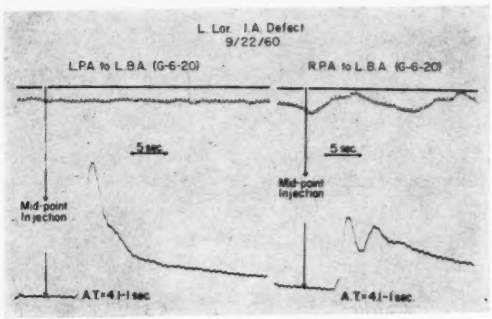

Figure 5a

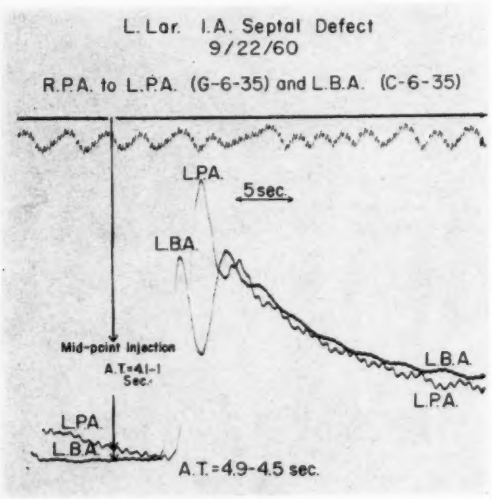

Figure 5b

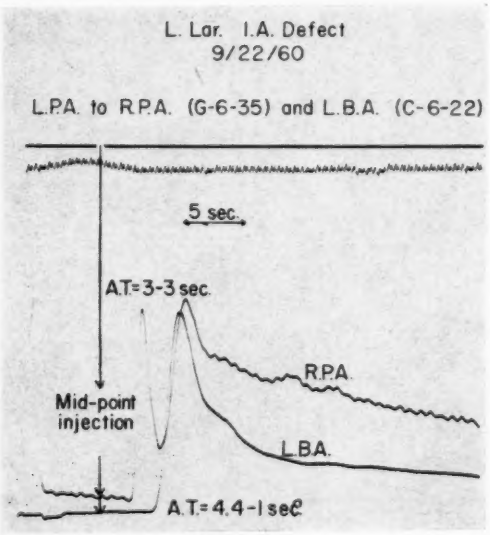

Figure 5c

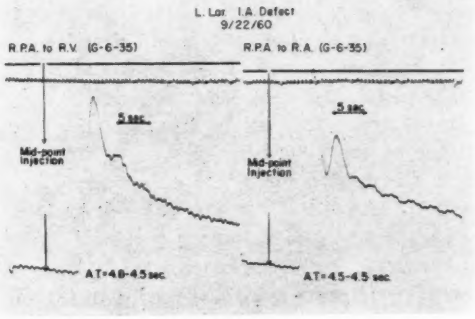

Figure 5d

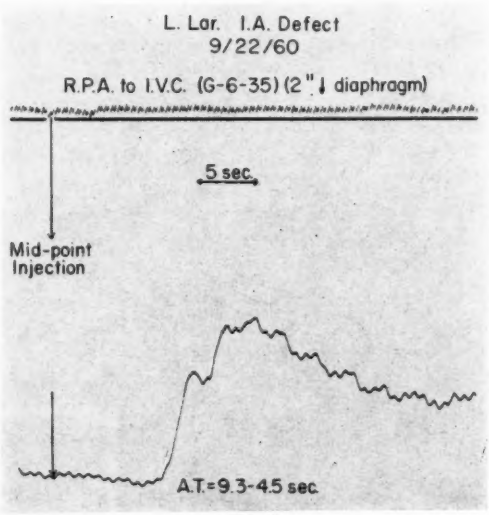

Figure 5e

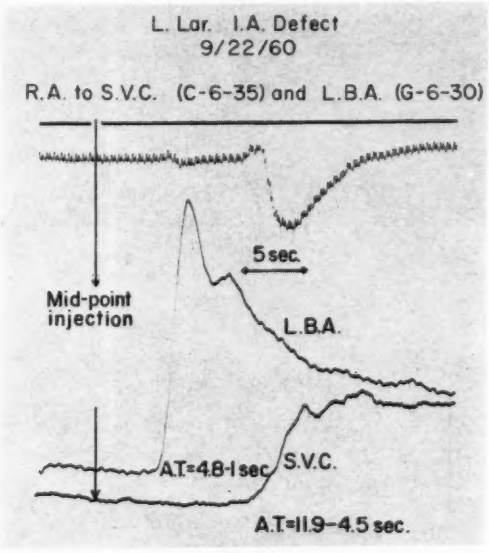

Figure 5f

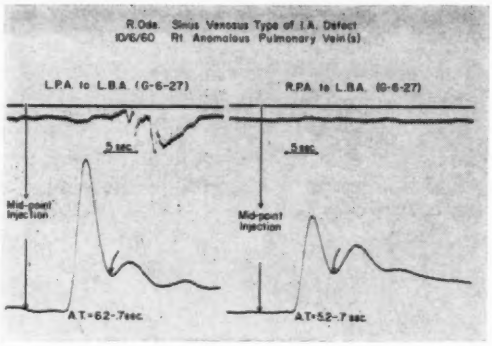

Figure 6a

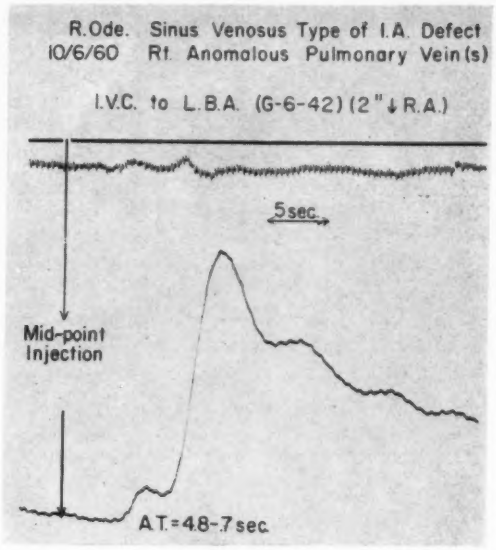
R.Ode. Sinus Venosus Type of I.A. Defect
10/6/60 Rt. Anomalous Pulmonary Vein(s)
I.V.C. to L.B.A. (G-6-42) (2" ↓ R.A.)
5 sec.
Mid-point Injection
A.T.=4.8-7 sec.

Figure 6b

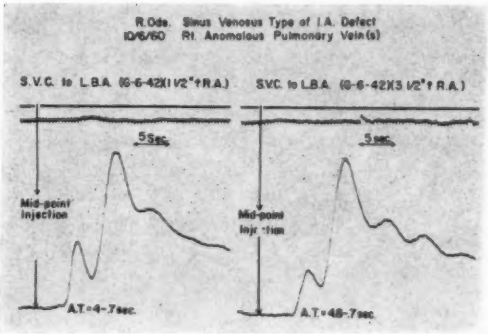

Figure 6c

nosis but not the localization of a left to right shunt. Exact localization is readily performed by simultaneous inscription of a systemic arterial curve and of a series of right heart curves (fig. 4). In figure 4a dye injection has been made into the right pulmonary artery; simultaneous dilution curves have been inscribed from the femoral artery and two sites in the right ventricle. In the absence of a left to right interventricular shunt, the appearance time for dye in the right ventricle should be at least 8-12 sec. since dye must traverse the pulmonary circulation, left heart, systemic circulation and right heart before appearing in the right ventricle. The right ventricular appearance time of 1.4 to 1.6 sec. after distal right pulmonary artery injection is diagnostic of a left to right shunt at or upstream to the sampling site. Both femoral artery inscription curves demonstrate obvious interruption of the downstroke. In figure 4b final localization of the

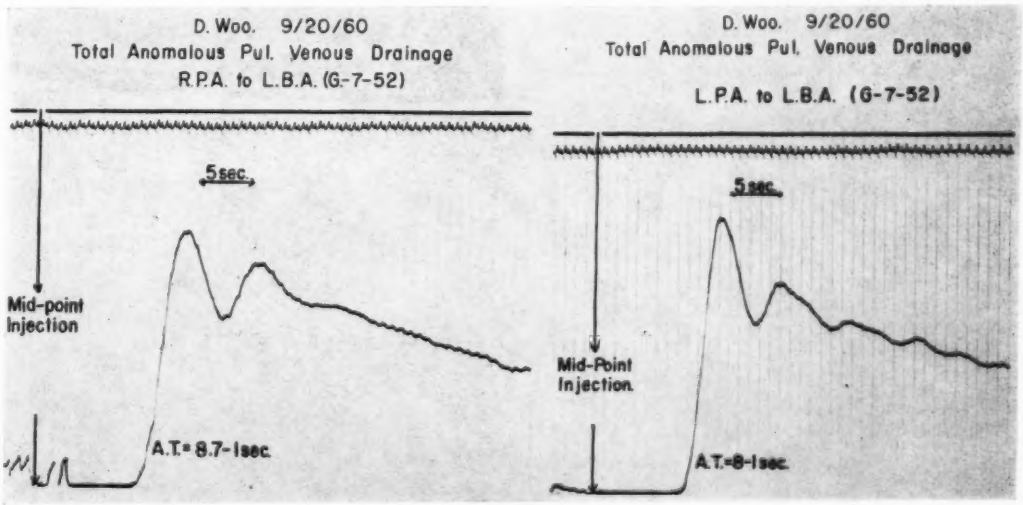

Figure 7a, b

site of the left to right shunt is made. The appearance time in the tricuspid area of the right ventricle is 2.1 sec.; the corresponding appearance time in the right atrium is 10 sec. The site of the left to right shunt is thus the right ventricle.

Localization of an interatrial shunt plus the demonstration of a differential shunting from the right (as compared to the left) lung across the interatrial defect is demonstrated in figures 5a-f. The anatomic substrate for preferential right lung shunting across an ostium secundum type of interatrial defect has been well established at cardiac surgery by the observation that the openings of the right pulmonary veins into the left atrium are much closer to the ostium secundum defect than are the openings of the left pulmonary veins. In

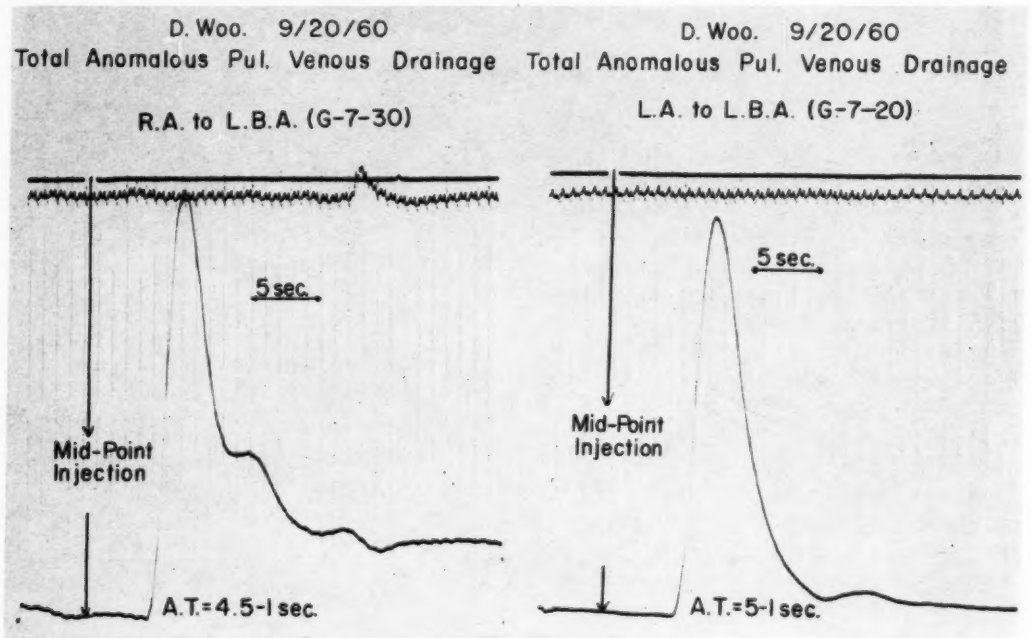

Figure 7c, d

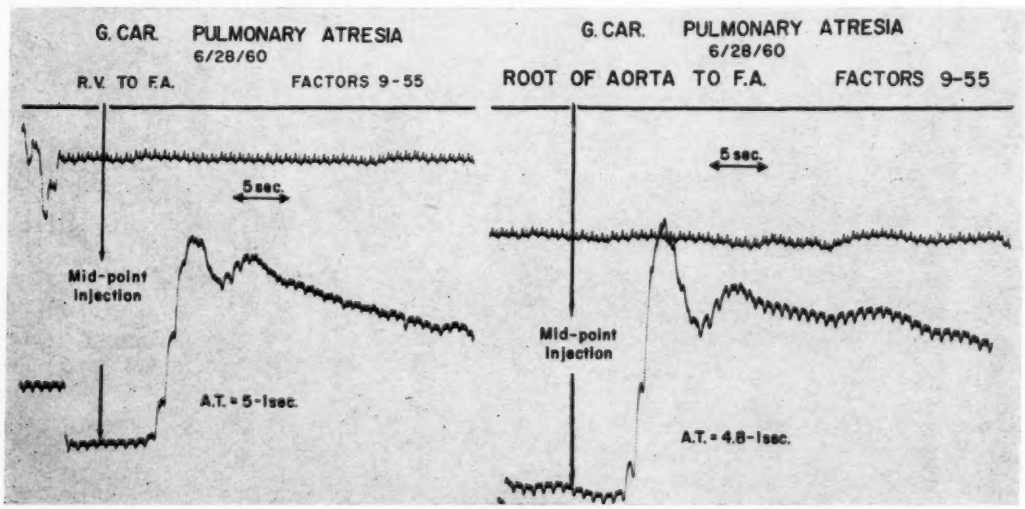

Figure 8a, b

Figs. 1-8—See text for detailed explanations of the dye dilution curves.

figure 5a the height of the brachial artery curve after dye injection into the left pulmonary artery is greater than after right pulmonary artery injection; the interruption of the downstroke is also considerably more prominent on the latter curve. Both of these findings are compatible with preferential left to right shunting from the right lung. These findings are demonstrated in another manner in figures 5b and 5c. In figure 5b, dye is injected into the right pulmonary artery and sampled from the left pulmonary and brachial arteries; in figure 5c the sites of injection and sampling are reversed. In the former curve the height of the left pulmonary artery curve (indicative of the degree of left to right shunting) is greater than that of the brachial artery; in figure 5c the heights of the pulmonary artery curve and brachial artery curve are equal despite the fact that the sensitivity of the brachial artery curve is less in figure 5c than in figure 5b. The early appearance time of dye in one pulmonary artery after injection into the other pulmonary artery is of course indicative of a left to right shunt. In figure 5d early appearance time is also present in the right atrium and ventricle. The absence of an early appearance time in the inferior vena cava (after right pulmonary artery injection, fig. 5e) and in the superior vena cava (after right atrial injection, fig. 5f) is diagnostic of an interatrial septal defect. At surgery an ostium secundum defect without anomalous pulmonary venous connection was found.

Preferential right lung shunting was also noted in another patient (fig. 6a-c). In figure 6a the difference in the brachial artery curve after injection into the two pulmonary arteries is shown. The greater degree of left to right shunting from the right pulmonary artery is readily noted. In figure 6b dye has been injected into the inferior vena cava and aspirated from the left brachial artery. A small right to left shunt is evident as part of a double-humped curve. Such small right to left shunts after inferior vena caval injection are not infrequently seen in the ostium secundum type of interatrial defect. A right to left shunt, however, after superior vena caval injection is not usually seen in this type of interatrial defect. Such a shunt is evident in figure 6c. These findings are highly suggestive, on the other hand, of a sinus venosus type of interatrial defect with anomalous connection of a right pulmonary vein into the superior vena cava or the right atrium.

The data in a patient with total anomalous pulmonary venous drainage are shown in figure 7. The brachial artery curve is similar after right or left pulmonary artery injection (fig. 7a,b). Since all pulmonary veins eventually empty into the right atrium, and in turn the right atrium empties into both the right ventricle and left atrium (via the interatrial defect which is necessary for survival in total anomalous pulmonary venous drainage), the drainage pathways of the two atria would be expected to be similar. Figure 7c,d demonstrate the similarity in brachial artery dye dilution curves after injection into the right or left atrium.

Another useful application of indicator dilution curves is illustrated in figure 8a,b. During cardiac catheterization the catheter tip repeatedly passed into a high pressure artery, the ascending aorta. The pulmonary artery could not be identified. Dye dilution curves from the ascending aorta and right ventricle are identical indicating that the drainage pathway for blood in the right ventricle is entirely into the aorta. Pulmonary atresia was subsequently verified anatomically.

Summary

It has become evident that measurement of oxygen content in the various chambers of the right heart and systemic arteries is not adequate for modern definitive diagnostic studies in congenital heart disease. The value of indicator dilution curves employing indocyanine green is illustrated in several varieties of congenital cardiac lesions.

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VOLUME XLVIII
NUMBER 6

Management of Respiratory and Intestinal Infections in Children

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Despite the advancements in chemotherapy during the past 30 years, respiratory and intestinal infections persist as the most common disorders in children, being responsible for approximately 38 per cent of the diseases treated by pediatricians in the United States.[1] Since the immaturity of the enzymic systems and metabolic functions in infants and young children facilitates the rapid dissemination of such infections into other organs and systems, even the mildest of these can give rise to serious complications if not adequately managed.[2,3] In mild infections, therapy is best limited to symptomatic relief and prevention of complications, but the presence of any deep-rooted viral or bacterial infection demands systemic therapy.[3,4]

The choice of a proper antibacterial agent for children presents certain difficulties.[2,3] The indiscriminate use of the antibiotics has led to the development of highly resistant pathogenic mutants as well as to patient sensitization. Thus, the infecting pathogens must be isolated, their resistance to the available antibiotic measured, and any sensitivity on the part of the patient established.[5,6] The time involved in carrying out these determinations is a further complication, particularly in the treatment of children. Once an agent has been selected, there remains the possibility of the child's intolerance to therapeutically effective dosages and of inability to detoxify and eliminate the drug.[2,3] Also, the frequent use of a tolerated antibiotic in a child, particularly in minor infections, may induce sensitivity to the drug, negating its future use in the patient even when it is the drug of choice.

An alternative to a potentially dangerous or sensitizing antibiotic is a sulfonamide. Through increased knowledge of the biochemical and physiologic actions of the different sulfonamides, many of their less popular features have been eliminated. Their toxicity potentials have been reduced, and their range of clinical application has been expanded through the development of long-acting derivatives ideally suited for use in systemic infections.[7,8]

Among the improved sulfonamides is Madribon.* Since its introduction in 1959, it has been extensively used in the management of respiratory, urogenital and gastrointestinal infections, as well as in primary and secondary pyogenic infections of the integument.[9-14] It is a potent, easily absorbed agent with long-sustained action and a highly flexible dosage schedule. It can be administered in tablets, capsules, suspension, or pediatric drops, and is considerably more economical than the standard antibiotics.

In the present study Madribon was used in a series of children with systemic infections, regardless of the in vitro sensitivity response of the isolated pathogens.

Materials and Methods

Forty-eight children seen in private practice were treated with Madribon for respiratory and intestinal infections. They ranged in age from five months to 11 years, with approximately equal distribution among males and females. The diagnostic categories, in their order of frequency, were tonsillitis, otitis media, tonsillitis with associated catarrhal and serous otitis media, pharyngitis, bronchitis, sinusitis, enterocolitis, and rhinitis. These were accompanied by headache, dry and painful throat, upset stomach, fever, referred earache, and general malaise.

Bacteriologic cultures were taken of 39 of these patients and tested for in vitro sensitivity to Madribon. A total of seven organisms was isolated; these included α-streptococci in 18 cultures, β-streptococci in nine, hemolytic Staphylococcus aureus in eight, Escherichia coli in four, Diplococcus pneumoniae in three, Candida albicans in one and Sarcina lutea in one. These occurred alone or in combinations of two and three organisms.

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*Trademark of Hoffmann-La Roche for sulfadimethoxine, Hoffmann-La Roche Inc., Nutley, N. J.

Madribon was administered in tablets and suspension. The usual tablet dosages were 1 Gm. initially, followed by 0.5 Gm. daily, but the more seriously ill children were given doses as high as 2 Gm. initially, with maintenance doses of 1 Gm. per day. When the suspension was used, the initial dose was 2 drams, followed by 1 dram daily, except in children one year old and younger who received ¾ to 1 dram initially with maintenance doses of ½ dram per day. Therapy was continued for from one week to four weeks, with an average of two weeks.

The only adjunctive medications used were nasal drops and a throat spray in two children and Otodyne ear drops for the relief of pain in another. The usual precautions in sulfonamide therapy were also observed.

Results

The response to Madribon therapy was excellent in 24 children, good in six, and poor in 13, with no follow-up in five (table 1). The bacteriological cultures revealed that eight patients had pathogens resistant in vitro to the sulfonamide. Judged by the clinical responses, however, four of these were cured, and one was greatly improved.

Table 1. — Results of Therapy With Madribon

Diagnoses	No. of Patients	Results			
		Excellent	Good	In-Effective	No Follow-up
Tonsillitis	17	8	1	5	3
Otitis media	12	7	1	3	1
Tonsillitis and otitis media	8	4	0	4	0
Pharyngitis	4	2	2	0	0
Bronchitis	2	1	0	0	1
Sinusitis	2	1	1	0	0
Enterocolitis	2	0	1	1	0
Rhinitis	1	1	0	0	0
Total	48	24	6	13	5

Many of the children with excellent results showed dramatic response to Madribon with rapid relief of their symptoms as well as eradication of the foci of infection. One child in this group later had a relapse and was referred for surgical treatment. This relapse occurred three months after cessation of Madribon therapy and could hardly be attributed to ineffectiveness of the drug.

Those with good results also obtained ultimate cures, but not as quickly. One child had an initially rapid clearing of his infection followed by relapse a few days later. With a renewal of Madribon therapy there was a complete remission of the infection, but as a measure of safety therapy was maintained for one month. In a child with a history of chronic tonsillitis therapy was also continued for one week after complete clearing of the infection to avoid possible relapse.

Two of the patients who failed to respond to Madribon alone were given penicillin and Cyclamycin with remission of their conditions. A third child, who had first obtained an excellent result, suffered a relapse and was treated with penicillin after failing to respond to a second course of Madribon. One patient who did not respond to any antibacterial therapy was referred for surgical therapy.

There were no signs of toxicity or sensitivity in any of the patients. Three children suffered from sleeplessness which appeared to be due to Madribon. In two cases nightmares ceased immediately when the drug was discontinued though the illness was unchanged. In one the drug was resumed and the nightmares returned.

There were no objections to either form of medication, but the suspension was more popular with the children because of its custard-like taste.

Discussion

The clinical results obtained in this study are not comparable to those noted by other investigators using Madribon for similar infections. The results lay at extremes of the response range, being either unequivocally good to excellent or poor, with no fair or moderate responses. In a few patients with poor results, failure could be attributed to resistant strains or to the fact that the infection was of such long standing that permanent damage to the lymphatic tissues had resulted. In most instances, however, the cause of failure could not be demonstrated. As is often the case with sulfonamides, there was no correlation between the degree of in vitro resistance and the in vivo responses, indicating the importance of the individual defense mechanisms in potentiating the therapeutic response. Thus, it may be that the highly variable characteristics of childhood response to medication were strong factors in these failures, although no untoward side effects were observed in these refractory patients.

Nevertheless, the safety and general efficacy of Madribon as compared with the antibiotics warrants its use in the pediatric patient. If there is no obvious response to Madribon therapy within a reasonable time, a change in the therapeutic program is indicated. In vitro resistance to Madribon should not be a contraindication to its use, however, since it is not indicative of its in vivo activity.

Summary

Madribon in tablets and suspension was administered to 48 children with respiratory and intestinal infections.

The tablet dosages were 1 to 2 Gm. initially with maintenance doses of 0.5 to 1.0 Gm. daily. Suspension doses were ¾ to 2 drams initially with maintenance doses of ½ to 1 dram daily. Therapy was continued for from one week to four weeks, and adjunctive therapy was limited to nasal drops, throat sprays, and Otodyne ear drops.

The results were excellent in 24 children, good in six, poor in 13, with no follow-up in five. There were no adverse side reactions to Madribon, and both formulations were acceptable.

It was also noted that the in vitro activity of Madribon was independent of its in vivo activity, and laboratory resistance of a pathogen was not a contraindication to its use.

Madribon is recommended as a safe and effective alternative to antibiotics in children with systemic infections.

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Anabolic Agents as Adjunctive Therapy in Allergy

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Well known is the fact that clinical manifestations of allergic reactions result from the combination of an antigen with an antibody. A substantial body of information concerning antigen-antibody reactions has been accumulated from in vivo and in vitro studies.

Basically, the treatment of the allergic patient has not changed significantly in the past decade. It still consists of (1) elimination of the offending allergen from the patient's environment; (2) palliative drug therapy with antihistamines and/or steroids such as ACTH or cortisone derivatives; and (3) lessening of sensitivity by injection of the specific antigen. The majority of allergic patients usually respond to this regimen; however, there are those who do not. This report is concerned with those severely allergic patients who respond poorly and require long term therapy, or who, following acute allergic episodes, are unable to regain pre-illness weight, vigor, vitality and well-being.

As stated previously, initial treatment of the allergic patient is usually of the palliative drug type. Relief of symptoms is of course the first goal in therapy. In the medical armamentarium are steroids which have the ability to influence metabolic processes favorably and steroids which can control allergic responses. In this latter group, certain medications, the gluco-corticoid class (ACTH, cortisone and its derivatives), used to control allergic responses may also adversely affect metabolic processes. Hence, in treatment,

Table 1

Patient	Age	Sex	Diagnosis	Weight (lbs.)
1	32	M	Allergic rhinitis	151½
2	45	F	Asthma, bronchial	117
3	5	M	Asthma, bronchial	34½
4	49	F	Asthma, depression	154
5	6	F	Asthma, eczema	43¾
6	13	M	Asthma	70
7	12½	M	Asthma, rhinitis	78¾
8	33	M	Asthma, eczema	121¼
9	5	M	Asthma	37½
10	59	F	Gastrointestinal allergy	98
11	23	M	Allergic rhinitis	128½
12	68	F	Allergic dermatitis	91¾
13	17	F	Allergic dermatitis	107½
14	19	M	Asthma, bronchial	117½
15	18	F	Allergic dermatitis	107
16	51	M	Allergic rhinitis	165
17	21	M	Asthma, bronchial	155
18	36	F	Allergic dermatitis	116
19	40	F	Asthma, rhinitis	115
20	64	F	Asthma, cardiac	107
21	60	F	Allergic rhinitis	100
22	68	M	Asthma, bronchial	147

the balance between physiologic anabolic and catabolic processes must constantly be kept in mind. This balance depends upon the ratio of anabolic and catabolic hormones, both endogenous and exogenous. If cortisone or its derivatives are administered in less than carefully controlled dosage, the metabolic balance may be disturbed, causing a pronounced negative nitrogen balance as part of the general catabolic state. If it is allowed to continue, the patient may experience loss in weight, fatigue, apathy or mental depression, and demineralization, leading in some instances to osteoporosis.

That good nutrition contributes to a favorable response to treatment is an accepted fact. The factors contributing to metabolic balance are many, and regulation or maintenance of the balance is a delicate process.

In the past year, we have observed a number of allergic patients who have responded slowly to standard antiallergen regimens and in whom, because of prolonged treatment, certain additional symptoms indicative of negative nitrogen balance developed. Twenty-two of these patients were selected for this evaluation because of underweight, loss of strength, loss of energy, weakness, or general fatigue and lassitude. Table 1 presents the age, sex, presenting diagnosis and pretreatment weight of these patients.

The ages ranged from five to 68 years. We have not observed a preponderance of these poor responders in any age group, nor do we find that they are more frequently of one sex than the other. Severity of the allergic reaction may contribute heavily to the over-all negative clinical state, and it appears that the duration of acute allergic symptoms is a major contributing factor. In order to improve the general catabolic state of these patients, and in addition to their individual allergy treatment, we instituted the use of an anabolic agent.

Anabolic agents promote tissue-building processes, and reverse catabolic or tissue-depleting processes. They rapidly establish a sustained, positive nitrogen balance by increasing the utilization of dietary protein. Appetite may improve dramatically. The resulting gain in weight takes the form of solid, working lean tissue.

The anabolic or protein-sparing effect can be accurately verified clinically by means of determination of nitrogen balance. In normal persons as well as patients in negative nitrogen balance, a powerful, positive effect on the equilibrium between protein building and breakdown is exerted. The use of anabolic agents is not new. Their widespread use, however, has been limited because of the inherent side effects of certain available preparations.[1]

We were prompted to evaluate nandrolone phenpropionate* because of reports of its wide margin of safety in the treatment of many clinical conditions characterized by negative nitrogen balance.[2-7] The dosage was 12.5 mg. (½ cc.) to 25 mg. (1 cc.) administered intramuscularly each week. Table 2 presents the dosage, frequency of administration, duration of administration, clinical response, side effects, pretreatment and post-treatment weight and gain in weight.

* Durabolin, Organon Inc.

Table 2

PATIENT	DOSAGE (I. M.)	FREQUENCY	DURATION	RESULTS	SIDE EFFECTS	WEIGHT (LBS.) PRE	POST	GAIN
1	1 cc.	weekly	8 weeks	Good	None	151½	155½	4
2	1 cc.	weekly	6 weeks	Fair-good	None	117	119½	2½
3	½ cc.	weekly	7 weeks	Excellent	Sex stimulus	34½	39½	5
4	1 cc.	weekly	6 weeks	Fair	None	154	156	2
5	1 cc.	weekly	4 weeks	Good	Eczema flare-up	43¾	45¼	1½
6	1 cc.	weekly	8 weeks	No gain	None	70-68½	70	0
7	1 cc.	weekly	5 weeks	Excellent	None	78¾	82¼	3½
8	1 cc.	weekly	6 weeks	Excellent	None	121¼	125¼	4
9	½ cc.	weekly	5 weeks	Excellent	None	37½	41½	4
10	1 cc.	weekly	8 weeks	Excellent	None	98	112	14
11	1 cc.	weekly	8 weeks	Excellent	None	128½	134	5½
12	1 cc.	weekly	6 weeks	Good	None	91¾	94	2¼
13	1 cc.	weekly	5 weeks	Good-excellent	None	107½	112	4½
14	1 cc.	weekly	4 weeks	Good	None	117½	119	1½
15	1 cc.	weekly	7 weeks	Good	None	107	111	4
16	1 cc.	weekly	4 weeks	Undetermined	None	165	165	0
17	1 cc.	weekly	7 weeks	Excellent	None	155	165	10
18	1 cc.	weekly	5 weeks	Good	None	116	119	3
19	1 cc.	weekly	6 weeks	Good	None	115	118	3
20	1 cc.	weekly	6 weeks	Excellent	None	107	111½	4½
21	1 cc.	weekly	6 weeks	Good-excellent	None	100	104	4
22	1 cc.	weekly	8 weeks	Good	None	147	152	5

Summary

This report concerns the use of anabolic agents as adjunctive therapy in allergy. The specific use was in patients who responded poorly to the usual allergic methods of avoidance and hyposensitization to the specific offending allergen and in whom under medical management symptoms of negative nitrogen balance developed, presumably from corticosteroid therapy.

The anabolic agent evaluated was nandrolone phenpropionate, because of its record of safety and because it could be given parenterally at the same time the patient received antiallergy injections.

Twenty-two patients are reported on in detail in this report. The common signs and symptoms were underweight, loss of strength, loss of energy, weakness and general fatigue and lassitude, superimposed upon the various manifestations of allergy.

No age or sex preponderance in any category was noted. There were no local or systemic allergic reactions to dosages of nandrolone phenpropionate ranging from 12.5 mg. (½ cc.) to 25 mg. (1 cc.) given intramuscularly each week.

The results in the 22 patients were 10 excellent responses, eight good responses, two fair responses and no recognized response in two. There was one flare-up of atopic eczema, which could not be accounted for on an allergic basis in a six year old girl. One five year old boy appeared to experience some sex stimulation as noted by his parents.

Our observations in this series of patients lead us to the conclusion that nandrolone phenpropionate is an excellent anabolic agent as adjunctive treatment in depleted allergic patients not responsive to the usual treatment alone.

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The Case of the Multiple Pedicles

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Over the past 20 years countless Jackson Memorial Hospital interns, residents and attending surgeons have had a hand in the case of Jesse Young. His complete medical record is best carried in a small wheelbarrow. Thus it was thought that many doctors now scattered about Florida might be pleased to hear of his progress.

An Avulsion Accident

In 1941 Jesse, a lather by trade, was returning from the old Richmond blimp base and had reached the bridge at Eleventh Street and Fifty-Seventh Avenue when the breakline of his new motorcycle came loose locking the front wheel. In the spill he was thrown through the bridge rail onto the ground below, and the motorcycle skidded down on top of him severely avulsing the soft tissues of the anterior surface of both lower legs. In Jackson Memorial Hospital emergency room the avulsed areas were debrided. The patient remained in the hospital for 18 months during which time he underwent lateral relaxing incisions and four episodes of pinch grafting all without avail. Even at this early stage there is a strong suggestion that the vascularity of the base of the ulcers was insufficient and the extent of the infection severe. Certainly the longer the ulcers were allowed to persist the more difficult they would be to cover. By 1944 bilateral amputation was offered the patient. He refused and went under the care of a private physician who covered the legs with adhesive tape in an attempt to promote epithelization. The tape merely floated off under the barrage of discharge.

Amputation Again Advised

From 1947 to 1952 the patient was able to hold down a job with the Humane Society by dressing his ulcers himself daily. He also became clever capturing escaped animals; his most famous catch was the trapping of a Rhesus monkey which ended "Patsy's three day rampage." During the 1947 flood while salvaging 250 stranded chickens Jesse had to trudge through deep water in high boots that rubbed his ulcers. After each crate had been filled with chickens and carried to safety, he recalls pulling off his boots and pouring out the bloody fluid. Experiences like this finally precipitated the patient's return to Jackson Memorial Hospital, and during this admission a multiple-staged crossleg flap was attempted. His legs were crossed nine weeks in a plaster cast, but the discharge and avascularity prevented success and only a small mound remains in memoriam (fig. 1). Sympathectomy then was offered, but the patient refused and left the hospital to continue with daily dry dressings. By now he had slight limitation of extension of the left knee and ankylosis of both ankles requiring heel lifts. In 1956 he was examined at a conference of specialists, and according to the patient their general advice was bilateral amputation (fig. 1).

A Pedicle Plan

At this same time a tube pedicle plan was presented to the patient. It was explained to him that the many failures had been due to the virulent infection and the lack of good blood supply in the area of the ulcers and that the chance of a tubed flap success depended on the pedicle's ability to resist infection and bring in a new blood supply. The plan outlined involved constructing a long tube across the patient's entire abdomen. One end was to be swung to a point above the right leg ulcer and in time the other end could be attached above the ulcer on the left leg. The project promised to produce a tube bridge spanning between the two legs which when divided in the middle would supply sufficient cover for both ulcers. This was a sound approach, but the patient was warned that even if all went well, it might take six months for completion. He expressed his lack of concern, reminding us he

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Fig. 1. — Fifteen year old chronic leg ulcers. Arrow points to remaining mound of previous crossleg flap which, when lifted to cover the ulcer, proved as friable and useless as wet tissue paper.

had already spent over 15 years with these ulcers. A promise was made that if it was surgically possible, regardless of time or pitfalls, his legs would be covered with good skin. He went for the plan like a bonefish for a quiet shrimp and, in fact, only once looked back.

An Early Setback

In September 1956 both a right and a left flank pedicle was made. In just under a month these two pedicles were joined by tubing the center portion (fig. 2) and the first ominous sign appeared as the middle of the new portion turned blue and then black. Tubing across the midline is always a hazard, but under ordinary circumstances the precautions taken here had been found sufficient. Hindsight on Jesse would now demand the final tubing of the midportion be preceded by parallel incisions and two weeks later completion by undermining and tubing the flap. Debridement of the necrotic center left two shorter pedicles (fig. 2) which first were lengthened along the thoracoepigastric line and gradually, stage by stage, over the months "cartwheeled" down each leg toward the ulcers. Jesse's fat was extremely friable, his skin lacerated far too easily, and his tissues just did not react normally. Yet biopsies of fat, muscle and skin as well as blood chemistry studies all gave negative results.

When covering a chronic ulcer with a pedicle, it is usually advantageous to implant the ends of the pedicle into normal tissue above and below the lesion. This method produces a pedicle bridge which spans the ulcer, and once an adequate blood supply has been developed, the tube can be unrolled and let into the excised defect. By the time that pedicles 1 and 2 approached their final destination, they had shrunk to such an extent that there was only enough to cover a portion of the two ulcers. It was noted, also, when each pedicle was let directly into the infected area, it became edematous and erythematous. This development was frighteningly reminiscent of an experience by McIndoe[1] in 1935 when using

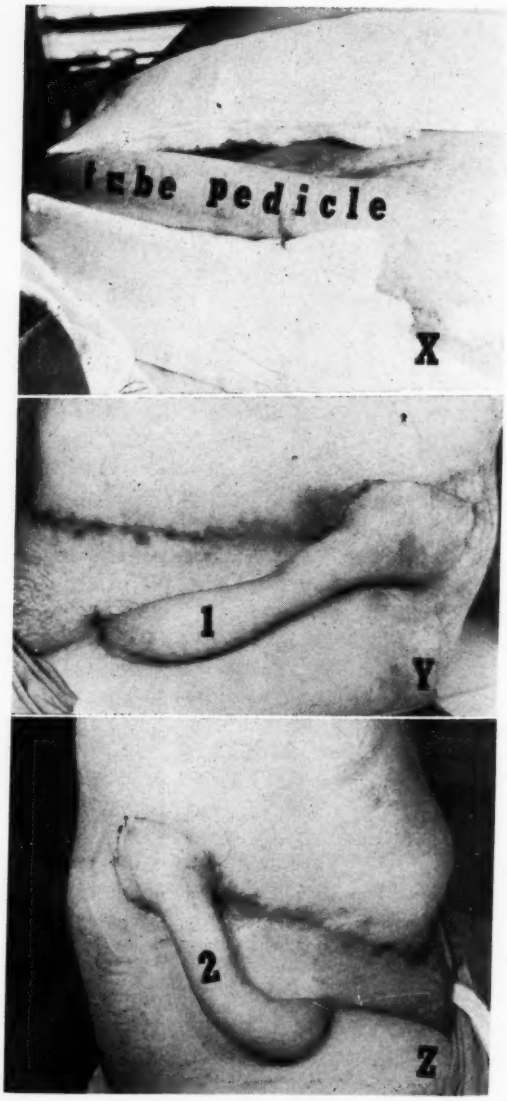

Fig. 2. — X. Long abdominal tube pedicle extending from one iliac crest to the other. Y. Central 2 inches of tube lost. Left pedicle 1 advanced to left thigh and later upper end delayed. Z. Right pedicle 2 advanced to right thigh on its way to ulcer on right leg.

a Gillies tube pedicle wick to tap a lymphedema in a lower extremity. The pedicle, being implanted below the lymphatic block, tapped bacteria along with the edema, and the patient died of a generalized streptococcal septicemia. In Jesse's case there was no lymphedema, but systemic antibiotics were used as a precaution against possible systemic introduction of the local infection. The implantations progressed without mishap, and the fact that these chronically infected and avascular sites had accepted even this much pedicle was encouraging (fig. 3).

Fig. 3. — Left pedicle 1 partially implanted. Right pedicle 2 completely implanted.

One Ulcer Covered

In June 1958 another tubed flap was constructed on the left side of the abdomen and with the aid of the left wrist as vector had arrived on the right leg at about knee level. Then came the lowest ebb of the entire pedicle campaign. The skin flap on the right leg was swung over and let into the larger ulcer on the left. As had occurred previously, the pedicle when attached to the infected area swelled and turned red, but this time it gradually pulled away and shriveled. Reattachment was accomplished, but by now it was obvious that complete cover of the ulcer on the left leg was not going to be possible with the amount of pedicle 3 still available. Jesse, with tears in his eyes, finally requested amputation. Sedation and a quiet discussion encouraged the patient to join in the planning of the next pedicle step. Together, we decided to take the remaining pedicle 3, now attached to but insufficient for the ulcer on the left leg, and cross it to cover completely the smaller raw area persisting on the right leg. In early 1959 the right leg was finished and has not produced a drop of drainage since that time. Subsequently, the patient did lacerate the pedicle by accident, but what is extremely important, the wound healed without difficulty.

Fig. 4. — Pedicle 4 attached below right knee has been implanted into remaining portion of ulcer of left leg by crossing legs.

Last Ulcer Covered

Jesse had always doubted the chance of covering the ulcer on the left leg, but when the question of amputation arose again, a fourth pedicle was suggested and accepted as a substitution. By this time the patient had developed such insight into the problem of pedicle transport that often he lay awake at night figuring out the best position for the next transplant. He was always cooperative, appreciative and popular among the house staff. Once a resident (K.B.D.) woke him at 3 a.m. to report the catch of his first bonefish, which had been hooked in the exact flats where Jesse had directed him.

By putting the patient through contortions it is possible to bypass numerous stages in the migration of abdominal pedicles to lower extremities. Yet after once using his wrist as vector, it became obvious that Jesse, with his limitation of knee motion, was not an ideal candidate for the speed-up program. Throughout his entire pedicle experience, but particularly during the transport of pedicle 4, the patient was kept in the hospital only a few days at a time and encouraged to return there only when he desired. This plan lengthened the time required for the reconstruction, but it gave a tiring patient and his pedicles valuable opportunities for rest.

As the new skin gradually had closed off the ulcers and reduced the infection, the patient noted

Fig. 5. — Both ulcers completely covered with thick serviceable skin of pedicles 1, 2, 3 and 4.

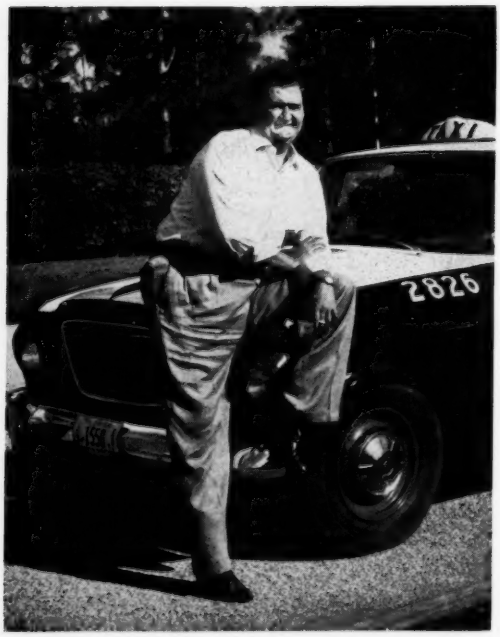

Fig. 6. — Jesse today.

increasing energy and expressed his desire to get back to work. In a last series of pedicle calisthenics (fig. 4) the tube was spread to cover the remaining defect on the left leg. Before his final discharge the presence of amyloidosis following the years of chronic infection was ruled out by a Congo red test which gave negative results.

Thus after 20 years, four of which were devoted to pedicle maneuvers, 53 operations and the use of one million 4 by 4 gauze sponges, Jesse went out of the hospital with both legs and each completely covered with good serviceable skin (fig. 5). It is over two years since coverage of the right leg and one year for the left leg. Occasionally after long hours of dependency there is a slight blistering of an area outside the pedicle implant which promptly clears with elevation and rest. Jesse has been back at work nine months, going sometimes twelve hours a day, transporting and selling vegetables. In season, he has the best tomatoes in the South (fig. 6).

Morals in This Medical Story

The necessity in teaching hospitals for house staff rotation increases the importance of the continuity of the attending staff in follow-up on long term cases. Taking selected patients into the "game" and not discounting their suggestions can become an advantage.

The value of local antibiotic therapy as proposed by Meleney[2,3] is emphasized. It was of aid in the last stages of this case, but if used in the beginning might have prevented the early failures. Beware crossing the midline with long tube pedicles. Delay surgically and delay again.

In the face of infection and avascularity the combination of patience, persistence and tube pedicles should never be underestimated. The importance of adequate convalescence for both patient and pedicles is mandatory during extended surgical treatment.

The embarrassment of the years required and the lack of a smooth cosmetic result are offset in part by the final success with prevention of bilateral amputation and functional cover of all ulcers.

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ABSTRACTS

Carcinoid Tumors. By William T. Williams, M.D. South. M. J. 53:629-632 (May) 1960.

Five cases of carcinoid tumor of the gastrointestinal tract are reported. A limited discussion of location, symptomatology, pathology and prognosis is presented. In publications dealing with this tumor, the terms "benign carcinoid" and "malignant carcinoid" are frequently used although, pathologically, one is indistinguishable from the other. Usually the term malignant carcinoid is used to classify the lesion which has metastasized at the time of observation. Occasionally the tumor is described as potentially malignant rather than benign or malignant. Because of the inability to distinguish the two forms pathologically, the author suggests that it would seem appropriate to label all carcinoid tumors as malignant neoplasms. He also suggests that a more aggressive surgical procedure be employed in certain instances of carcinoid of the rectum.

Diabetes, Atherosclerosis and Hypercholesteremia: A Preliminary Report on the Study of Dietary Control. By Seymour L. Alterman. Postgrad. Med. 28:112-120 (Aug.) 1960.

Extensive research has indicated a definite relationship between atherosclerosis and hypercholesteremia. Since both of these conditions are often prominent in diabetes, it would seem wise to keep the serum cholesterol of diabetic patients in a low, normal state. The main approaches to this objective are through diet, chiefly by substitution of polyunsaturated fats for saturated fats in the diet. The author is among those workers who consider that the intake of fat is excessive in the standard diet recommended by the American Diabetes Association and therefore has no lipid-lowering effect. He has found that a modified form of the diet, with unsaturated fats substituted for saturated fats, has effectively reduced serum cholesterol levels in diabetic patients. He reports that the diets he proposes in this article have been readily received by intelligent patients seen in private practice and have been found palatable and easy to prepare. The use of low fat diets in conjunction with the substitution of unsaturated fats for saturated fats in these patients has successfully reduced serum cholesterol levels.

Cancer of the Mouth and Throat: Therapy and Repair. By Richard T. Farrior, M.D. South. M. J. 53:1021-1030 (Aug.) 1960.

This presentation deals with the management of cancer seen in the routine oral physical examination as it should be performed by all otolaryngologists. Surgical therapy, when operation is feasible, is outlined with consideration given to the lip, alveolus and bone of the jaw, buccal mucous membrane (cheek), floor of the mouth, tongue, tonsil, palate, salivary gland, pharynx and larynx. The group of malignant lesions discussed accounts for 5.5 per cent of all cancer deaths, a significant figure, especially when as high as half of the deaths could be prevented with early detection, a responsibility of the otolaryngologist. Cure rates would be even higher with combined early detection and adequate initial excision. Likewise, individualization of each case would produce better cure rates and also in many instances would allow better preservation of function.

The author emphasizes that there can be no standard or routine operation in cancer surgery. Each individual lesion must be regarded separately and each individual must be evaluated separately. The condition of the patient, the exact location of the lesion, the degree of anaplasia, and the presence of regional metastases influence the therapeutic modality to be chosen. With regard to whether reconstruction should be total or partial, now or later, Dr. Farrior is of the opinion that primary reconstruction should not be considered if there is a remote possibility that its use would influence adequate excision. With correct thinking he believes that familiarity with reconstructive technics allows radical excision more often than it prevents adequate excision. In advocating the preservation of tissue, accepted principles of cancer surgery cannot be violated concerning the margin of normal tissue which is to be taken with the specimen.

President's Page

The Florida Medical Foundation

The Florida Medical Foundation is a nonprofit organization having for its purpose "to promote better medical care in Florida." This Foundation was established by the House of Delegates of the Florida Medical Association in May 1956.

In order to obtain tax exemption status some changes were required in the charter, especially with reference to the objectives of the Foundation. The Internal Revenue Service, in January 1959, stated that the Medical Foundation was exempt from federal income tax and that contributions were deductible.

The revised objectives of the Foundation are as follows:

1. Improvement of the health and of the medical care of the people of Florida.
2. Sponsorship of graduate and postgraduate medical education without preference for any person.
3. Aid to persons of Florida needing financial charitable assistance who are pursuing an education in medicine.
4. Aid to deserving indigent or destitute physicians who by reason of illness or mental or physical incapacity need charitable assistance.
5. Promotion and sponsorship of medical research exclusively for public purposes and benefits.

This is the season of the year when we hear most often the phrase, "Peace on earth and good will to all men." I think it is most appropriate that we at this time express our feeling of good will by making a generous contribution to this fund. From the objectives listed you can designate where you want your money to go. The student loan fund and the aid to deserving indigent or destitute physicians particularly need building up.

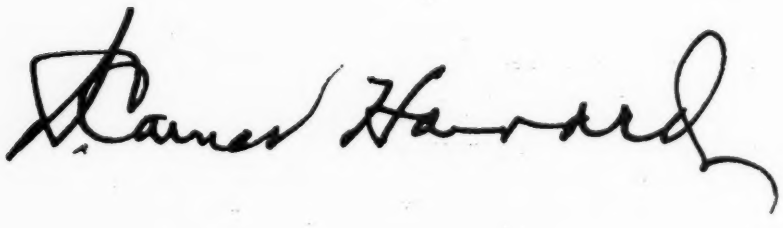
This fund is growing each year. In 1957 there were 33 donors, in 1958, 18, in 1959, 331 and in 1960, 417. The amount paid in last year was $6,151.25, which does not include research grants. This is a good amount, but nothing like as good as it should be. Remember this is your fund and in a measure your financial contribution for the advancement of medicine.

There are a good many capable and deserving young men who are being kept out of medical school because of lack of funds. I know of no way that our money could go any further toward helping more people than by helping one of these deserving young men.

During my lifetime I have seen several good physicians who through poor management, sickness, or other misfortune have been made destitute. Without exception they are too proud to call for help and will always insist that they do not need it. Certainly we owe to them our undying gratitude for their past deeds and in what way can we express this better than by making them comfortable at such a time? For—

"It is in giving—that we receive."

St. Francis.



EDITORIALS

Indicator-Dilution Techniques

Indicator-dilution techniques, one of which is the subject of an article in this issue of The Journal ("Newer Methods for Detection of Congenital Cardiac Shunts"), have been available for some time. In 1951 Bing[1] reported the use of Evans blue dye (T-1824) for dye dilution curves from the right side of the heart. This method has a serious disadvantage in that it requires that during the 30 to 60 seconds that the blood sample is withdrawn the oxygen saturation of the blood must be assumed to be constant. Radioactive indicators overcome the oxygen saturation difficulties, but pose new problems of handling and irradiation.

The search for a dye which would meet the many requirements requisite to dye injection techniques was carried out extensively in the laboratory of Dr. Earl H. Wood of the Mayo Clinic. Particularly notable was the work of Dr. I. J. Fox in conjunction with Dr. L. G. S. Brooker of the Eastman Kodak Research Laboratories. As a result of the efforts of these investigators and many others, the dye "cardio-green" (indocyanine green), a dye more suitable for use in indicator-dilution techniques, was developed. "Cardio-green" has the marked advantage of having its peak light absorption at 800 millimicrons, which is the point where oxyhemoglobin and reduced hemoglobin transmit light equally. It is also a wave length at which the infrared photo cell of the oximeter has its peak sensitivity, and therefore variations in the amount of oxygenation of the hemoglobin in the blood have no effect on the results obtained in the recording of indicator-dilution curves with this indicator dye. In addition "cardio-green" is water soluble, nontoxic and suitable for sterilization so that it can be utilized in aseptic techniques and for sterile intravenous injections.

The various detailed descriptions of "cardio-green," its development, and its application to all parts of the cardiovascular system concerning the diagnosis of intracardiac shunts, determinations of central and total blood volumes, circulation time, cardiac output, and various liver function studies have been well documented in a series of publications concerning indicator-dilution techniques which have emanated from Dr. Wood's laboratory since 1956.[2-6]

Although the indicator-dilution technique utilizing "cardio-green" is an excellent one, unlike the present authors we have not discarded the less accurate oxygen technique completely, but preferably use the two techniques together in a complementary method.

In the discussion of a dye dilution pattern of the left to right variety, the authors give as an example "a young boy with an Eisenmenger's complex." This is a poor example since Eisenmenger's complex is not an example of a left to right shunt, but is an example of a mixed shunt which is most often predominantly right to left.

A point of clarification concerns the right atrium as an injection site. It is important when one wishes to inject from the right atrial area that the catheter tip be positioned as exactly as possible so that several obvious pitfalls can be avoided such as injection into the coronary sinus ostium or into a patent foramen ovale. It is much better to situate the tip of the catheter exactly at the junction of the superior vena cava and the right atrium or at the junction of the inferior vena cava and the right atrium.

It has also been well documented that on occasion one may see a right to left shunt in an ostium secundum defect after superior vena caval injection. This type of right to left shunt after superior vena caval injection does not automatically mean a sinus venosus type of atrial septal defect, but can mean nothing more than the usual type of interatrial ostium secundum type septal defect. In the initial series of interatrial communications reported by Swan,[7] seven of the 11 cases did show a right to left shunt with the inferior vena caval injection, and four of the 11 cases showed a right to left shunt with a superior vena caval injection.

There is also some question about the similarity of indicator-dilution curves after injection into the right and left atria of a patient with total anomalous pulmonary venous drainage. The drainage pathways in this condition from the two atria are not similar. Dye injected into the right atrium will have a far different dye curve than

dye injected into the left atrium. Dye put into the left atrium mixes with a relatively small amount of blood and this dye mixture goes right out to the peripheral sampling site and would tend to transcribe a normal curve although it might show a low output. Dye injected into the right atrium is mixed with a relatively large volume of blood and the dye-blood mixture from that point goes into two separate areas: (1) to the left heart through the functional defect in the atrial septum; (2) into the right ventricle and out the pulmonary artery.

Additional uses of indicator-dilution techniques include the more accurate selection of the site for injection of contrast material in angiocardiography. By utilizing indicator-dilution techniques in this manner, the catheter tip can be positioned in a tetralogy of Fallot so that the majority of the contrast media can be injected in such a manner that most of the dye goes out the right ventricular outflow tract and through the pulmonary artery delineating the anatomical area in question and sending only a small amount of dye across the ventricular defect. This type of injection considerably diminishes the amount of relatively undiluted contrast material going to the brain.[6]

In conclusion, the use of indicator-dilution techniques utilizing "cardio-green" has been a revolutionary step forward in diagnosing congenital and acquired cardiovascular defects. Dr. Wood and his group at the Mayo Clinic have certainly made an outstanding series of contributions in this respect.

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MYRON W. WHEAT JR., M.D.
GAINESVILLE

What Price Welfare?

Christmas is the time of giving; the tradition of helping others is a well established tenet of the Judeo-Christian ideal and no one of us would want it diminished one iota. Yet evidence is mounting steadily that, as the New Year begins, Americans need badly to examine the system of governmental handouts, with no attention to whether or not they are deserved, which has become part and parcel of political life.

The plight of Newburgh, New York, a city that discovered how its very life was being destroyed by the cancer of unrestricted welfare handouts by governmental agencies at all levels, startled and shocked many Americans. It seemed unbelievable that the tradition of individual effort fostered by our forefathers should have been so completely undermined by the anxiety of governmental agencies to hand out money to people, of whom the only effort required was to hail a taxi and ride to the welfare office. As the facts were uncovered, it became quite evident that Newburgh was suffering gravely from a malignant social tumor, as were many other communities across the face of the land. Yet when radical surgery was undertaken, the howls from those who gained most through the system, the bureaucrats who administered it at all levels, were far louder that the cries of those deprived of free support and forced to go to work.

If this country is to survive as anything resembling the democracy of stalwart individuals standing upon their feet through the free enterprise system that it was intended to be by the men who died at Lexington, Concord, and Valley Forge almost two hundred years ago, the headlong rush toward the ultimate disaster of a welfare state must be discouraged. Traditionally, the medical profession has always been in the forefront of this battle; even now we are under heavy fire to bring us, too, under the domination

of the government. If we fail to stand firm, the cause is lost beyond redemption.

Twenty years ago this writer portrayed in his first novel the evils of government-controlled medicine, a system similar to the one now proposed for the upper age levels of the population under the guise that Social Security is a form of insurance, when any high school student of government knows that it is not. Much of the material for that novel came from early reports concerning the experience of England with its National Health Service. Twenty years later, critical studies of the British experience are being widely published, studies made by English social scientists, not doctors. What they tell of the effect that government control has had on British medicine is both shocking and saddening. In fact, the truth has turned out to be considerably more harrowing than it was portrayed in fiction.

Medicine is primarily a calling, not simply a profession. Men are drawn to it by the instincts of the humanitarian and scientist and rarely do the tangible rewards exceed the intangible. The British health insurance scheme has, quite predictably, turned out to be over-costly, inefficient, and afflicted with a massive inertia. The worst effect, however, has been a deadening of the enthusiasm of young men to enter the profession of medicine. When the betterment of a doctor's scale of living consistently lags behind that of the general population, one can hardly expect even dedication to bring young people into medicine. In fact, this sapping of the very lifeblood of a vital profession by the stultifying effects of governmental control is the greatest danger in the schemes proposed by those who would make America a welfare state.

The medical profession is already finding itself in the position of being the "thin gray line" standing between true democracy and a system that makes a mockery of human ambition and effort. However difficult and costly the role, it must not even consider surrender.

Frank G. Slaughter, M.D.
Jacksonville

Editor's Note: This is the ninth consecutive year The Journal has published a December guest editorial by Dr. Frank G. Slaughter of Jacksonville, Florida's distinguished physician-author.

The Supreme Miracle of Christmas

It was old home week in Bethlehem. The emperor had declared a census should be taken, and everyone should register in the city of his birth. So half of the population of Palestine was shuttling across country for the enrollment. Elaborate festivities were planned in every community for the grand homecoming that was in progress. The large cities, like Jerusalem and Capernaum, were greatly diminished, but the towns and villages were filled to capacity by their returning kinsmen.

It was at this season that Jesus Christ was born in the town of Bethlehem. There was merrymaking in the streets that night, no doubt, but it was arranged for the paying guests. No one took note of the Child born in a hotel stable. Strange, for the startling announcement of "a man in space" would not be so amazing as a declaration of the Scriptures concerning the birth of Jesus Christ. The space age, miraculous as it is, will prove the complete undoing of our race unless it is entered under the sovereignty of this incarnate Son of God.

The supreme miracle of Christmas is not the virgin birth. It is the incarnation. It is the fact that the Spirit of God became incarnate in the body of man and for thirty-three years thereafter dwelt among men—teaching—healing—comforting—inspiring. He answered their age-old questions: What is God like? What does God want? Where can God be found?

A week before Christmas Day some friend will casually comment to you that he hasn't yet "gotten the Christmas spirit." You will know what he means. He hasn't yet become feverishly concerned about all the things he's going to buy and all the plans he's going to make for what he calls the celebration of Christmas.

After all, what does it take to give one the "Christmas spirit?" A few years ago Olin Stockwell emerged, lean and ill, the last American missionary to come out of Communist China. Before his release he had been in prison two years —fourteen months in solitary confinement. He said, "Last Christmas I was in a solitary cell. Suddenly out of the stillness from the cell next

to mine a beautiful Chinese voice was singing 'O come all ye faithful, joyful and triumphant; O come ye, O come ye to Bethlehem.'" That, I say, is the Christmas spirit. When the sublime fact that God has in Christ revealed the answer to all our deepest hunger, the secret to all our distresses, the fashion by which all life must be lived, we discover the Christmas spirit in its original sense.

This Child, born in a stable, to a mother whose husband could get no reservation in the Inn, is God's answer. In fact, in spite of the superficiality with which men have generally accepted Him, He is recognized as the Supreme Personality of the race and His life has profoundly affected both individuals and society wherever He is known.

An author, returning from the West, wrote of one scene: "The vistas here stretch the eyes, enlighten the heart, and make the spirit humble." This is something of the effect the very story of the life of Christ has upon mankind. But in a moment of social, economic, cultural, and international crisis such as our day presents, the fact that God has revealed both the principles and the power by and through which alone all our problems can be resolved should give us a new kind of Christmas spirit. When this fact comes home to us, we will hasten abroad like the shepherds after their visit to Bethlehem, telling everyone we see of the glory which has been revealed to us with regard to this King of Kings and Lord of Lords.

JAMES W. HENLEY, RESIDENT BISHOP
THE METHODIST CHURCH,
JACKSONVILLE AREA

Editor's Note: This is the first in a series of guest editorials appropriate to the season by leading ministers within the state published upon solicitation in the hope that physicians will find these messages a source of guidance and inspiration.

Four Organizations and Their Role in the Problem of Juveniles

> Train up a child in the way he should go,
> and when he is old he will not depart from it.
> Proverbs 22:6

What a wise statement made hundreds of years ago by the prudent King Solomon! It is as timely today as it has been for past generations —and will be for future ones.

A great deal is being heard about juvenile delinquency and the causes fostering it. It would seem that all the contributing factors have been cited in the volumes of papers and books written on the subject; yet the home, the church, the school and the community must take their fair share of the blame for failing the children.

The home, an institution ordained by God, is not a materialistic structure but a relationship between husband and wife and their children. A child has a much better chance of growing to maturity as a well adjusted individual if he enjoys the security of a good home, and promoting this feeling of security is the love his parents have for each other. In their love, the child should see evidence of mutual respect, understanding, interest and teamwork. There should be laughter and happiness, which demonstrate to the child that the "home front" is united. Proper discipline is a source of security. The child may object strenuously to being disciplined, but, at the same time, he is not wise enough to guide his activities properly and must look to his parents for this guidance. If the parents are divided in their approach, the child loses his respect for them and in so doing feels bewildered and insecure.

We have juvenile delinquents because we first have delinquent parents. On his day off, Dad is too busy playing golf to spend time with the children. Mother is too busy with housework and club activities to know where the children are and what they are doing. It is all right for Mother to be club president and engage in other worth while activities as long as she does not neglect her children. If she does, one day the realization may come that she has fostered a delinquent of her very own. It is not the responsibility of the neighborhood to be a baby sitter. Besides, it does not make a very good one.

The churches are failing the children by emphasizing the social and recreational needs of the individual. The attraction should not be hamburgers, hot dogs, bingo, ping pong, and the like; it should be duty, love and devotion to their Cre-

ator which draws them there. Their reward for attending should be spiritual truths which will strengthen and fortify them against the temptations and disappointments of life. The churches need to teach Christianity and leave recreation to the home and community. They should combat a religion which for too many has become so superficial that one goes to church to further his social status, to promote a job or his position in the community.

It has been said that "families that pray together stay together" and, no doubt, there is a great deal of truth in the statement. Many parents make no pretense at attending church; however, some do send their children while they remain at home reading the daily newspaper. Training a child in the way he should go must be by example, and families that go to church together and worship God together rarely go to juvenile court together.

The schools also must share in the responsibility for the juvenile problems. Fortunately most teachers are dedicated, capable, with high moral standards; however, as in every other profession, there are those whose moral character is questionable and no doubt they have a deleterious effect on children since the teacher is often the model for the child. The responsibility of the teacher, therefore, is great, but the responsibility of the parents is even greater in seeing that the children have a good "model."

Many boys and girls lack the capacity to excel and become disinterested when forced to continue studies they cannot or will not grasp. This situation creates boredom; boredom results in truancy, and truancy leads to delinquency. Rather than force them to stay in school, they should be allowed to attend a school created to teach a trade whereby they can earn a living for themselves and contribute to society.

The community has a decided obligation to its youth. There should be more and better facilities for sports and other recreational activities. There should be safe, well supervised playgrounds where children may go to expend the boundless energy that only youth possesses. There should be more policemen to patrol play areas because those who would molest children frequent them. Well organized, supervised and protected playgrounds would be costly, but $40,000 would go a long way in creating such a place, and approximately this amount is required to process one delinquent through the juvenile court.

Granted, however, that there always will be children in trouble in spite of all good intentions, the community has the responsibility to maintain facilities for their care which will assist in the salvage of as many of them as possible. At present, many facilities are wholly inadequate and completely understaffed. Youthful first offenders must be returned, many times of necessity, to the same environment which propagated their trouble in the first place. This is due to the need for adequate homes to which they may be sent for rehabilitation while an effort is made to improve their own home environment. Such facilities should be financed wholly by the community through taxes and not be dependent upon various civic clubs to bolster the inadequate funds available for operation.

It takes a great deal of training to bring up a child in the way he should go, and the home must be the primary training ground. The church, the school and the community can be aides only and never a substitute. Each one, however, should make every effort to create the proper environment, for in children is the hope for the future.

James R. McCain, M.D.
Jacksonville

OTHERS ARE SAYING

The Curse of Something for Nothing

By F. L. Maus

A bank president has implicit faith in the integrity of his cashier. The cashier suddenly absconds with fifty thousand dollars of the bank's funds.

A man hurries through a New Year's throng in Times Square. He reaches for his purse. It is gone; picked by someone in the crowd.

The vacationing members of a family return to their home in the city. It has been ransacked. Valuable possessions are missing.

Two armored-car guards are shot down in a bank entrance without warning. Two other men with smoking guns grab the fallen pouches of currency and disappear.

If you are a regular reader of newspapers, the events briefly described above should have a familiar ring. Perhaps, at one time or another, you may have wondered how it happens that an

able-bodied adult gets himself to the point where he will commit such crimes.

There are at least two truths about such actions that are obvious, although they are frequently overlooked. The first of these truths is the simple fact that a person who commits a crime similar to those mentioned must do some thinking and planning to get the deed done.

"How then," one might ask, "does the thinking of such people get so grooved as to lead them ultimately down the road of crime?"

The answer to that question deals with the second obvious truth about the criminal behaviour previously described. It is this: In each of the four crimes mentioned, the villain in the act took something that did not belong to him; something he had not earned; something for which he was offering nothing in return; *something for nothing*.

There is in almost all of us, old enough to think, that ageless dream of acquiring something for nothing, in large or small amounts. Some of us buy lottery tickets at almost every opportunity. Some of us play the numbers racket. Some of us secretly look forward to the death of a rich relative, expecting him to remember us generously in his will. Some of us sue others for substantial damages when, in fact, little or no damages were really suffered. Some of us eagerly seek tips on the stock market or the horse races. Some of us succumb to the fascination of the slot machine or the roulette wheel. And many of us recall, with feelings akin to nostalgia, the enchantment of our childhood belief in the pot of gold at the end of the rainbow. And so it goes, an almost endless refrain: *Something for nothing. Something for nothing. Something for nothing.*

Constantly thinking about getting something for nothing can lead to constant scheming about how to get something that way. As a result, all desire truly to earn one's way of life may become lost. And, if that happens, getting without giving can become the accepted method of seeking a livelihood. Therein lies the answer to the question as to how the thinking of some people can get so grooved as to lead them ultimately down the road of crime.

However, only a relatively few people permit the appeal of something for nothing to lure them into acts of crime. Others, stopping short of crime, permit themselves to be lured into the squeamish life of a panhandler. Still others develop a facility for cheating within the law. And still others succumb only to the extent of acquiring a general disposition to be irresponsible or lazy, the reason for which they never seem quite able to understand. They know only that they are more or less constantly hoping that, somehow, somewhere, their ships will come in without much effort on their part.

The large majority of people, however, seem to suffer little or no personality damage from indulging in the quite human pastime of hoping to get something for nothing. But, there is another aspect of this something-for-nothing stuff that is far more serious than a simple case of armed robbery.

History is strewn with the wreckage of men and of nations lured to their destruction by the bait of something for nothing—lured by smoothly planned appeals to the criminal tendencies that lie dormant and unrecognized in almost everybody. And the lure succeeded only because its true nature was invariably hidden under a barrage of righteous propaganda.

It may well be that history is subtly being compelled to repeat itself; perhaps on a much larger and rascally scale than ever before. Already, enough of the people may have swallowed the bait to cause some impartial historian in the distant future to write a book entitled: "The Collapse of the Twentieth Century Civilization—An Era of Something for Nothing." He may describe in some detail the manner in which unscrupulous and clever public leaders fooled hosts of sincere folks back into misery and slavery with that old fable about the pot of gold at the end of the rainbow—Caesar's rainbow.

Perhaps the future historians will say something like this:

Even in the United States of America, which was the last remaining hope of the world in 1960, colossal give-away schemes, carefully disguised by a scholarly brand of double-talk, had already corrupted millions of mature and able-bodied people into the belief that their personal welfare was the responsibility of someone else—that they should rightly be supported by the product of other people's efforts and not their own!

Those right thinking leaders in the nation who sought to reveal the gigantic hoax were reviled and ridiculed. They were too late. The clever and unscrupulous ones had too successfully endowed with the halo of righteousness their unholy gospel of something for nothing. And their clever success was in no small measure abetted by those popular and breezy intellectuals who assured all

who would listen that the people, simply because they could enter a voting booth, were justly entitled to whatever they chose to vote to themselves.

And so, confused by intellectual half-truths and by subtle but outright falsehoods, the people were persuaded to forget that personal usefulness is the only highway men may travel in a successful pursuit of liberty and happiness. In substitution for the truth they were trapped into forgetting, the people were systematically persuaded to believe that, if they would but worship at the feet of "all-wise" government, a constant flood of something-for-nothing would bring a harvest of "security" to all. Of all the crimes committed in that dazzling but foolish era, this was the greatest.

Ideas on Liberty—September 1955 #2

The Record
Broward County Medical Association
July 1961.

CLINICAL COMMENT

Annual Meeting
American Roentgen Ray Society

The sixty-second annual meeting of the American Roentgen Ray Society was held at the Deauville Hotel, Miami Beach, Sept. 26-29, 1961. The meeting was called to order by the President, Dr. Harold G. Reineke, of Cincinnati. Dr. Train Leucutia, of Detroit, was installed as president-elect.

Forty-eight scientific papers were presented during the morning sessions. Angiography received considerable attention with subjects including "Congenital Variations Encountered in Cerebral Angiography," "Angiography as an Aid in Determining Resectability of Lung Cancer," "Transaortic Catheter Opacification of the Left Ventricle," "Extra Large Field Angiography" and "Physical Aspects of High Pressure Angiography, Lymphangiography, and Renal Angiography." A paper of special interest dealing with this subject concerned "Flexible Tubing for Flow-guided Cardio-vascular Catheterization and Visualization." Flexible elastic tubing is used instead of ridged cardiac catheters, and the tubing is carried by the blood stream rather than manipulated into position. The tubing is introduced into the venous system percutaneously. This paper also discussed possible related advances coming from catheter visualization of the vascular system such as interarterial, nonsurgical grafting of blood vessels.

The afternoons of the meeting could be divided between some 44 scientific exhibits covering a wide range of subjects, and the instruction courses under the direction of Dr. Harold O. Peterson of Minneapolis. Of special interest to many radiologists was the course on mammography given by Dr. Robert L. Egan of the M. D. Anderson Hospital and Tumor Institute, Houston, Texas. Dr. Egan described in detail the technique of mammography employed by that institution and stated that successful examination of the breast is 95 per cent based on successful roentgenography. He reviewed the results of five years' experience and over two thousand such examinations. Many observers gained the impression that, with Dr. Egan's technique, the breast adapts itself to roentgen examination nearly as well as do the lungs.

The annual Caldwell lecture was delivered by Dr. Harold O. Peterson, Chairman, Department of Radiology, University Hospital, and Professor of Radiology, University of Minnesota Medical School, Minneapolis. In discussing his subject, "The Radiologist and the Special Procedures," Dr. Peterson suggested that many of the so-called special procedures now being done by another physician with the help or cooperation of the radiologist and/or the Department of Radiology could just as well be done solely by the radiologist. It was suggested that this approach would result in some of these procedures being performed by fewer persons with more experience and skill and would produce better technical results and hence more benefit to the patient.

Marvin V. McClow, M.D.
Jacksonville

Annual Scientific Assembly Florida Academy of General Practice

Diagnostic clues and practical management consideration of several entities frequently dealt with in general practice were presented to the Florida Academy of General Practice at its Twelfth Annual Scientific Assembly, held in the Diplomat Hotel, Hollywood, October 6 through 8, 1961. Program Chairman, Walter J. Glenn Jr., M.D., provided a brilliant array of speakers for the morning programs, leaving the afternoons and evenings open for recreation.

R. Bruce Logue, M.D., Professor of Medicine at Emory University School of Medicine, in three separate appearances on the program discussed diagnosis in congestive heart failure, coronary disease, and cardiovascular disease in general. He noted the multiple factors causing atherosclerosis and commented on its treatment. The diagnosis of angina pectoris and infarction is often missed, he said, by the application of too rigid criteria based on laboratory and electrocardiographic findings, rather than on clinical grounds.

John B. Miale, M.D., Professor of Pathology at the University of Miami School of Medicine, directed his remarks to the office diagnosis and management of anemia. He decried the use of therapy of this condition without first determining its cause, which basically, he stated, is due either to loss of blood cells or to failure of their production.

"Tuberculosis Revisited" was the title of the talk given by Charles A. LeMaistre, M.D., Professor of Medicine at the University of Texas Southwestern Medical School. He discussed the causes of failure of treatment of tuberculosis and related the types of tubercle bacilli to clinical types of infection.

In presenting emergency room problems, Robert H. Kennedy, M.D., Director of the Field Program Committee of the American College of Surgeons, offered some of the results of a survey made by him on this subject. He emphasized in the care of the patient with multiple injuries the necessity of having one physician, either a general practitioner or a general surgeon, as captain of the treatment team. He also pointed out many of the errors made in the handling of such patients.

A panel discussion by Nylene E. Eckles, M.D., and Richard G. Martin, M.D., both of whom are on the teaching staff of the University of Texas Postgraduate School of Medicine and the Anderson Hospital and Tumor Institute, brought out many practical and humanitarian principles to be applied in the surgical and medical management of terminal cancer. They weighed the many available palliative drugs and procedures in the light of which ones would be most valuable for the whole patient.

Leo H. Siegel, M.D., attending gastroenterologist, Presbyterian Hospital Unit, United Hospitals, Newark, N. J., crystallized the many facets of the diagnosis and treatment of patients with functional disorders of the gastrointestinal tract. His recommendations to make such diagnoses on the basis originally of thorough history and physical examination and to handle such patients with sympathetic understanding were well received.

The meeting was rounded out by sessions of the Florida Academy's Board of Directors and of the general membership, and by nightly social events.

LEO M. WACHTEL, M.D.
JACKSONVILLE

Annual Fall Meeting Florida Orthopedic Society

The annual fall meeting of the Florida Orthopedic Society was held on October 21 and 22 at the Boca Raton Hotel, Boca Raton. Six formal papers were presented by members of the society, and a discusser had been perarranged to comment on each of the papers given. During the afternoon session on Saturday, six members presented case studies representing either a good or bad result from their private practice. Again a preassigned discusser commented on the case and opened the discussion. In this way a great deal of interesting and helpful information was presented.

The guest speaker, Dr. Daniel C. Riordan, Clinical Professor of Orthopedic Surgery at Tulane University School of Medicine, New Orleans, presented a most astute and interesting discussion covering all phases of acute trauma to the hand. The material ranged from basic anatomy and the mechanism of injury to definitive surgery. He stressed several points in diagnosis, management and surgical techniques. Acute infections may present clinical findings on the dorsum of the hand, yet the basic pathology and abscess formation are on the palmar aspect, necessitating the surgical approach to be directed in this area. Partially amputated parts can be determined to

be viable by the tourniquet test, thus helping to decide whether or not to perform a primary amputation or try to salvage the part by the determination of the presence of adequate circulation. Complete disruption of blood supply to the part is the indication for considering primary amputation as any amount of reconstruction would be destined to failure. A most interesting problem is the degloved hand or finger. Often following replacement, there results a secondary slough of the replaced skin flap. This can be avoided by defatting the skin and thus utilizing it as a split-thickness primary graft. The results following this procedure, combined with the usual cleansing and surgical debridement, are most satisfactory. Dr. Riordan also stressed the importance of meticulous care in the handling of tendon injuries and discussed the many important aspects of flexor tendon repairs in and around "no man's land."

A different type of scientific program is being planned for the annual spring meeting to be held in conjunction with the annual meeting of the Florida Medical Association in May.

Philip O. Lichtblau, M.D.
West Palm Beach

AIDS TO PRACTICE

Question: How can a doctor guard against misappropriation of his money by a dishonest aide?

Answer: Compulsive and hardened embezzlers are very few among medical assistants, we are convinced. But dishonesty of this type, especially in infrequent, small amounts, may be compared to some diseases—it tends to arise when the environment is conducive. Good "internal controls," axiomatic in accounting principles, based on a definite separation of the bookkeeping function and the cashier function, are not practical in most medical offices. It is wise, therefore, to utilize other standard office procedures and practices to the extent they are practical in each office. The first of these would be recognition by the physician that the money handling and bookkeeping functions are of importance to him, that they should be granted adequate time for their proper, precise maintenance, and that authority and responsibility for these functions be firmly placed.

Select your medical assistant with care. Have a telephone conversation with her previous employers; do not give merit to letters of recommendation. Bonding your aide is of questionable value, but the application for a bond will bring about a substantial search of her background relating to the subject.

Require your day book or "daily log" to be a complete register of all patients served each day, whether a fee is charged or not; at irregular, unannounced intervals approximately monthly or quarterly, compare a pocket list of patients seen by you with those shown on the log. Some charge-slip systems, and some patients' accounts bookkeeping systems such as the Todd-Hadley or ABC, have a built-in check for omissions if properly used. Insist that a receipt (prenumbered and personalized by the printer) be issued for all currency and coins received. Deposit intact all monies received to your business bank account as of each working day so that your bank statement will be a substantiation of your log. A restrictive endorsement "for deposit only" should be stamped on each check received at the earliest practical moment. Do not "dip into the till" yourself, or, if you must, give your cashier some signed receipt for the monies so used.

Establish and maintain a "control account" for your detailed patients' accounts. Then, have a quarterly or annual audit of cash accountability if you do not regularly use a management service or independent accountant. All this will help and please your conscientious assistants and will discourage most misappropriation tendencies.

Question: Like most physicians, I have had no formal education in economic subjects or training

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Questions and comments on appropriate economic and practice management problems are invited for publication in this column. Answers to your questions will be provided by a panel composed of various Florida members of the Medical-Dental-Hospital Bureaus of America.

in business matters. Yet, I would like to know at least the elementals of insurance, investment, long term financial planning and other matters applicable to my practice and my home. Is sound, unbiased information in capsule form available to me from sources that are not trying to sell me something?

Answer: A workable and money-saving acquaintance with economic and business matters can be developed with sufficient interest on your part and a relatively little application of time. Some Florida colleges offer evening adult classes or correspondence courses on economics, insurance, investment principles and a number of allied subjects; we know of some physicians and their wives who have enjoyed such courses. You already know of the value of "Medical Economics" magazine. A subscription to "U. S. News and World Report" or "Time" can keep you posted on general business conditions and some of the factors which affect them. "Changing Times," the Kiplinger service for families, 1729 H Street, Northwest, Washington 6, D. C., is brief, interesting reading. And, if you are serious about this thing, buy some of the publications ($1.00 each) or become an annual sustaining member of the American Institute for Economic Research, Great Barrington, Mass. This is an independent, scientific and educational organization engaged in impartial economic research; its publications are designed for the nontechnical reader, among them: "Life Insurance and Annuities From the Buyer's Point of View," "What Will Deflation or More Inflation Mean to You?," "Investment Trusts and Funds From the Investor's Point of View," and "Economic Tides and Trends, Their Effects on Your Lifetime Plans."

LETTERS

October 26, 1961

Dear Sir:

Has medical internship lost its usefulness? The answer to this question is an emphatic NO.

We hear much criticism today against internship. Is it justified? Is it still serving a useful purpose? Why is the internship being attacked so universally? Those who criticize fail to see the main reason behind the opposition to a traditional training period which has long proved its worth without question.

The problem centers around the American Medical Association's Council on Education and Hospitals which has approved internship programs around the country so indiscriminately that almost any hospital medical staff can have an "internship" for its hospital by meeting a few established criteria.

How can you approve two to three times as many internships as there are interns to fill them without creating chaos, by competition between medical centers, between hospitals and medical centers, and between hospitals. Most hospitals not directly affiliated with medical schools want interns for the sole purpose of covering the hospital 24 hours a day—to man the emergency room, to scrub with the private physician, to start blood transfusions and to answer the numerous calls from the floor nurses for patients requiring an order for medications for pain, laxative, sedation and the like.

I personally feel my internship was excellent. It was a rotating type at Temple University Hospital in 1955. Unfortunately, this fine medical center discontinued its internship later—NOT because the program had lost its usefulness, as many proclaim, but because of the increasing competition among hospitals for interns.

A short distance away, another non-medical-school-affiliated hospital was getting interns. Why? Because it offered $400 monthly in comparison to the $25 monthly Temple was willing to give. It is indeed a sad thing for a medical school graduate to be forced into taking an inferior intern training program simply because the excellent one was unable or reluctant to offer a living stipend.

In this column, The Journal encourages open discussion of controversial subjects. Letters, to be published, should be in good taste and signed by the authors. The opinions expressed are those of the author and not necessarily of The Journal.

There should be only enough internships available as there are medical graduates to fill them, and these should be at university-affiliated hospitals only, where the practicing physicians also hold positions of academic rank in the medical school. Stipends should be realistic so that a married intern with a family can live adequately through the year. Unless significant changes in the internship approval system are made now, the internship as we knew it in the past will disappear from the scene.

The intern year should be a well regulated and supervised year of training in the care of the sick and injured. It should not be one of increased leisure time spent in the sun, accompanied by high stipends and fringe benefits. The practicing physicians should be dedicated individuals pledged to devoting many hours to the training program. Just to attend a clinic so that the clinic is "covered" by a staff physician is not enough. The staff physician should be prepared to discuss some definite subject as related to the patients being seen. This requires preparation beforehand. In this way, the intern will feel he is getting something out of his training.

By and large, many practicing physicians are too busy to take an active role in a teaching capacity. Many are unqualified to serve as teachers to the developing young doctor. The accrediting boards serve only to evaluate the physical plant as meeting the standards for adequate medical care. They do not evaluate the practicing physicians who will be assuming the role of teacher in the program once it is approved. If this were done, I am sure many presently approved programs would be discontinued.

I, for one, hope to see the internship continued, but unless there is an altered trend in the internship approval system, we may as well discontinue it altogether.

Quentin C. DeHaan, M.D.
Medical Director
Polk County Hospital
Bartow

Fourth Annual Conference
County Medical Society Presidents and Secretaries

January 13-14, 1962
Hotel Robert Meyer
Jacksonville

NEWS-PERSONALS

The Fourth Annual Cardiovascular Seminar sponsored by the Hillsborough County Heart Association of Tampa and the Suncoast Heart Association of St. Petersburg will be held Saturday and Sunday, February 17-18, at the Hawaiian Village Motel in Tampa. Programs will be presented from nine until four o'clock including luncheon panels each day, according to announcement by Dr. Roy F. Saxon Jr. of Tampa. Members of the faculty include Dr. Jesse E. Edwards of St. Paul, Minn.; Drs. Donald B. Effler and Irving H. Page of Cleveland; Drs. Alexander Nadas and Bernard Lown of Boston, and Dr. Tinsley R. Harrison of Birmingham, Ala.

The Midwinter Seminar in Ophthalmology and Otolaryngology has been scheduled for January 28-February 4 at the Americana Hotel in Bal Harbour, Miami Beach. Lecturers in ophthalmology include Drs. A. B. Reese, Byron Smith and Donald M. Shafer of New York City; Dr. Albert E. Sloane of Boston, and Dr. Lorenz E. Zimmerman of Washington.

Post Graduate Cardiac Surgical Colloquia sponsored by the Section of Thoracic and Cardiovascular Surgery and the University of Miami School of Medicine scheduled for January and February include: "Physiologic Aspects of Total Body Perfusion," Dr. John H. Gibbon Jr., Professor and Chairman, Department of Surgery, Jefferson Medical College, January 13; "Perfusion Hypothermia," Dr. Ivan W. Brown Jr., Professor of Surgery, Duke University School of Medicine, January 27; "Auxiliary Circulatory Support," Dr. Dwight E. Harken, Associate Clinical Professor of Surgery, Harvard Medical School, February 10, and "Open Cardiac Correction of Tetralogy of Fallot," Dr. John W. Kirklin, Section of Surgery, Mayo Clinic, February 24. The conferences will be held in Jackson Memorial Hospital.

A Seminar in Obstetrics and Gynecology is being presented by the Department of Obstetrics and Gynecology of the University of Florida College of Medicine in Gainesville January 11-12. The faculty is Dr. Duncan E. Reid, Professor

and Chairman, Department of Obstetrics and Gynecology, Harvard Medical School, Boston, and Dr. Howard C. Taylor Jr., Professor and Chairman, Department of Obstetrics and Gynecology, Columbia University College of Physicians and Surgeons, New York City.

Dr. Fred H. Albee Jr. of Daytona Beach has been elected a trustee of the American Association of Medical Assistants.

Drs. G. Dekle Taylor and Max Michael Jr. of Jacksonville participated in the program of the annual meeting of the Georgia Academy of General Practice held the middle of October at Jekyll Island, Ga. Dr. Taylor presented a paper entitled "Office Management of Common Ear Problems," and Dr. Michael discussed the topic "Newer Concepts of Common Viral Illness."

Dr. Harold O. Hallstrand of Miami participated in the panel discussion on "Diagnosis and Treatment of Tumors and Cysts of the Neck, Including Carcinoma of the Thyroid Gland" at the Mid-Atlantic Regional Meeting of the International College of Surgeons held October 12-14 at Atlantic City.

Dr. J. Brown Farrior of Tampa presented an exhibit entitled "Ear Surgery - 1961" at the meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago, October 6-13. In addition, Dr. Farrior gave courses on physiological stapedectomy and tympanoplasty.

Drs. Howard C. Duckett and John J. Fisher of Jacksonville attended the International Congress of Obstetrics and Gynecology and the International Congress of Psychology at Vienna, Austria, during August and September. Dr. Duckett also attended the World Congress of Genetics in Rome.

A Seminar in Pediatric Surgery entitled "Common Surgical Problems in Children" will be presented by the University of Florida College of Medicine in Gainesville January 25-27. Non-surgical conditions affecting surgical decisions in children, pre- and postoperative management of the child, and recent advances in surgical care of infants and children will be discussed by Drs. Tague Chisolm and Robert Ulstrom, University of Minnesota Medical School, Minneapolis; Dr. William Clatworthy, Ohio State University College of Medicine, Columbus; Dr. Floyd Denny, University of North Carolina School of Medicine, Chapel Hill; Dr. Howard Pearson, Naval Medical Research Laboratories, and members of the Departments of Pediatrics and Surgery of the University of Florida College of Medicine.

Dr. S. Allen Clark of Lakeland has been presented a plaque by the First Methodist Church of Lakeland in recognition of his 35 years of service to the church school as a former superintendent and chairman of the Commission on Education.

Dr. William M. Madison Jr. of Jacksonville presented a paper entitled "Cardiac Involvement in the Ehlers-Danlos Syndrome" at the Regional Meeting of the American College of Physicians held at Sea Island, Ga., September 29-October 1.

Dr. Theodore F. Hahn Jr. of Deland was installed as president of the Florida Diabetes Association at the Ninth Annual Meeting held October 19-20 at Miami Beach. Dr. James B. Tobias of St. Petersburg was chosen president-elect, and Dr. George F. Schmitt Jr. of Miami was reelected secretary-treasurer. Serving as members of the Board of Directors for the next year will be Drs. Richard H. Sinden of St. Petersburg; A. Gorman Hills and Kenneth Phillips of Miami; James R. West of Lakeland, and James E. Fulghum of Jacksonville.

Dr. J. Harold Newman of Jacksonville presented a paper entitled "Renal Hypothermia Produced by the Direct Application of Ice" at the annual meeting of the Northeastern Section of the American Urological Association held at Poland Spring, Maine, in October.

Dr. Robert B. Lawson of Miami, Acting Dean and Chairman of the Department of Pediatrics of the University of Miami School of Medicine, has accepted the joint appointment as Chairman of Pediatrics at the Northwestern University School of Medicine and chief of staff of the Children's Memorial Hospital in Chicago effective in February.

The Eighth Annual Central Florida Medical Meeting will be held Saturday, February 3, at the

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Cherry Plaza Hotel in Orlando. Medical and surgical aspects of certain endocrine disorders are to be discussed by the guest speakers which include Dr. Garfield Duncan of Philadelphia; Drs. John Stanbury and Oliver Cope of Boston, and Dr. John Preedy of Atlanta. A golf tournament is scheduled for Thursday afternoon, February 1, at the Orlando Country Club and informal Fireside Conferences the following evening. The meeting will be concluded with a social hour and banquet at which Colonel George Knauf of Cape Canaveral will be principal speaker. Dr. Don C. Robertson of Orlando is chairman of arrangements.

Dr. Ralph Jones Jr. of Miami, Professor and Chairman of the Department of Medicine at the University of Miami School of Medicine, has been awarded the medal of the Pan American Medical Society in recognition of his contribution to fellowship and understanding among scientists in the western hemisphere.

MEETINGS

December

Florida Obstetric and Gynecologic Society, Dec. 3-4, Gault Ocean Mile Hotel, Fort Lauderdale

Florida State Surgical Division, International College of Surgeons, Dec. 1-2, College of Medicine, University of Florida, Gainesville

January

Seminar in Obstetrics and Gynecology, Jan. 11-12, College of Medicine, University of Florida, Gainesville

Conference of County Medical Society Presidents and Secretaries, Jan. 13-14, Hotel Robert Meyer, Jacksonville

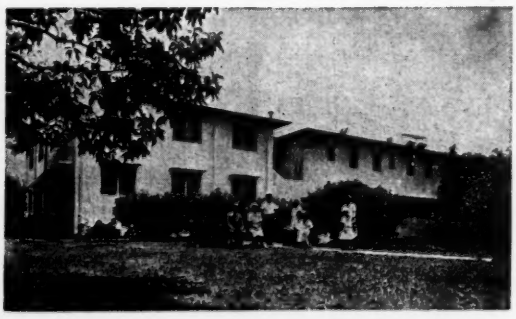
Seminar in Pediatric Surgery, Jan. 25-27, College of Medicine, University of Florida, Gainesville

Midwinter Seminar in Ophthalmology and Otolaryngology, Jan. 28-Feb. 4, Hotel Americana, Miami Beach.

February

Eighth Annual Central Florida Medical Meeting, Feb. 1-3, Cherry Plaza Hotel, Orlando

Fourth Annual Cardiovascular Seminar, Feb. 17-18, Hawaiian Village Motel, Tampa



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DEATHS

Andrews, Chadbourne Avery, Tampa; born in Brockton, Mass., on Dec. 12, 1884; College of Physicians and Surgeons of Baltimore (now the University of Maryland), 1909; held an internship and residency at St. Joseph's Hospital in Baltimore; entered the practice of surgery in Tampa in 1912; served as a first lieutenant in the Army during World War I; because of a war injury was obliged to forego surgery and after 1922 devoted full time to dermatology; was chairman of the Procurement and Assignment Board of Hillsborough County during World War II; was a past president of the Hillsborough County Medical Association and of the Southeastern Dermatological Association; was a charter member of the Florida Society of Dermatology and served twice as its president; also held membership in the American Academy of Dermatology, the American Medical Association and the Southern Medical Association; died January 2, aged 76.

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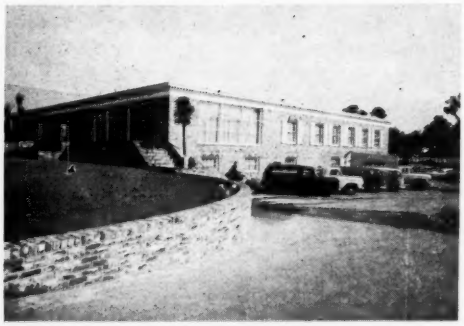

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Baber, John Marion Jr., West Palm Beach; born in Farnell, Miss., Mar. 16, 1895; George Washington University School of Medicine, Washington, D. C., 1929; a veteran of World War I and a recipient of the Congressional Certificate of Merit for Selective Service work in World War II; also prominent in the legal profession, he received the LL.B degree at Georgetown University School of Law in 1922 and the LL.M. degree the following year; was admitted to the bar in the District of Columbia in 1923 and that same year to the United States Circuit Court of Appeals for the District of Columbia and the Supreme Court of the United States; was an instructor of commercial law and English at the Catholic University in Washington in 1922 and 1923 while serving as an attorney with the Department of Justice; was admitted to the practice of medicine in the District of Columbia in 1929 and practiced in Washington as an otolaryngologist and specialist in legal medicine; served as instructor in anatomy and physiology at Emergency Hospital School of Nursing from 1930 to 1935 and instructor in anatomy at Georgetown University School of Medicine from 1933 to 1935; engaged in general practice in West Palm Beach since 1946; was a member of the Palm Beach County Medical Society, the American Medical Association, the Southern Medical Association and the American Board of Legal Medicine, and president of the Palm Beach County chapter of the Florida Academy of General Practice; died June 14, aged 66.

Croft, George William, Jacksonville; born in Aiken, S. C., in 1907; Medical College of South Carolina, Charleston, 1932; served a residency at Baker Sanitarium, Charleston, and did graduate work at Roper Hospital, Charleston, and Cook County Graduate School, Chicago; had practiced surgery in Jacksonville since 1933; held membership in the Duval County Medical Society, the American Medical Association and the Southeastern Surgical Congress; died Mar. 3, aged 53, after an illnes of several months.

Glenn, Francis William, Coral Gables; born in Maryland in 1904; Temple University School of Medicine, Philadelphia, 1933; served a residency in orthopedic surgery at the Shriners Hospital for Crippled Children in Philadelphia from 1935 to 1938; practiced orthopedic surgery in Coral Gables for 22 years; was a mem-

ber of the Dade County Medical Association, the American Medical Association, the American Academy of Orthopaedic Surgeons, the International College of Surgeons, and the American Fracture Association of which he was Regional Vice President and a member of the Board of Governors; served on the faculty of the University of Miami School of Medicine; died February 27, aged 57.

Henley, Charles Frederick, Jacksonville; born in Prairie, Miss., in 1905; University of Tennessee College of Medicine, Memphis, 1930; served an internship at a Memphis hospital and at St. Luke's Hospital, Jacksonville; had practiced in Jacksonville since 1931; was a member of the Duval County Medical Society, serving as its president in 1950, the American Medical Association and the Southern Medical Association, and was a fellow of the American Academy of General Practice; had served as treasurer and as chairman of the Florida Medical Committee for Better Government; died October 29, aged 56, following a heart attack.

Hudson, Howard Sampson, St. Petersburg; born in Pleasantville, N. J., in 1912; Hahnemann Medical College, Philadelphia, 1936; interned at St. Luke's Children's Hospital in Philadelphia; was a veteran of World War II; practiced in Ocean City, N. J., from 1946 to 1958; joined the staff of the Pinellas County Health Department in 1958, as epidemiologist; was a member of the Pinellas County Medical Society and the American Medical Association; died June 15, aged 49.

Ingram, Hollis Carlyle, Orlando; born in Zumbro Falls, Minn., in 1905 and moved to Orlando in 1920; Tulane University School of Medicine, New Orleans, 1934; served an internship at Wesley Hospital, Wichita, Kan., and a residency in Eye, Ear, Nose and Throat at Charity Hospital of Louisiana, New Orleans; in 1937, entered the private practice of medicine in Orlando in association with his father, the late Dr. L. C. Ingram; during World War II served in the Army Air Force from 1942 to 1945; was a past president of the Orange County Medical Society and a member of the American Medical Association, the Florida Society of Ophthalmology and Otolaryngology, the American Academy of Ophthalmology and Otolaryngology, and the Academy International of Medicine, and a diplo-

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Dermatology
Julian M. Ruffin, M. D., Durham, N. C.
Gastroenterology
Carroll L. Witten, M. D., Louisville, Ky.
General Practice
Howard W. Jones, Jr., M. D., Baltimore, Md.
Gynecology
Thomas M. Durant, M. D., Philadelphia, Pa.
Internal Medicine
Maxwell M. Wintrobe, M. D., Salt Lake City, Utah
Internal Medicine
Bernard J. Alpers, M. D., Philadelphia, Pa.
Neurology
Ralph C. Benson, M. D., Portland, Ore.
Obstetrics
Victor A. Byrnes, M. D., St. Petersburg, Fla.
Ophthalmology
John H. Moe, M. D., Minneapolis, Minn.
Orthopedic Surgery
Albert C. Furstenberg, M. D., Ann Arbor, Mich.
Otolaryngology
Jeff Minckler, M. D., Denver, Colo.
Pathology
Lewis L. Coriell, M. D., Camden, N. J.
Pediatrics
Robert D. Moreton, M. D., Fort Worth, Texas
Radiology
John H. Mulholland, M. D., New York, N. Y.
Surgery
Owen H. Wangensteen, M. D., Minneapolis, Minn.
Surgery
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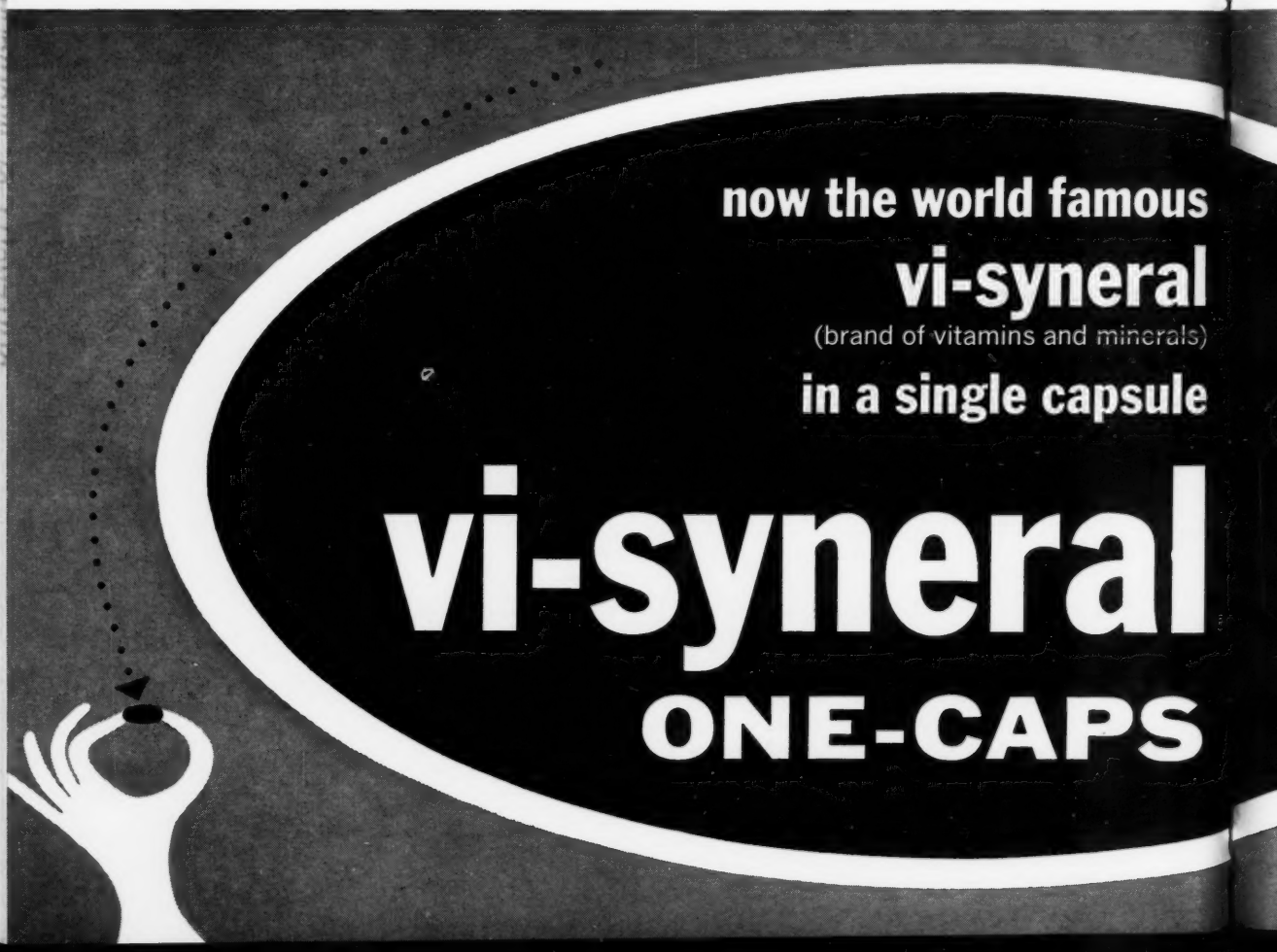
mate of the American Board of Ophthalmology; served for years on the Medical Advisory Committee to the Florida Council for the Blind; died June 11, aged 55.

Jones, Frank Curtis, Archer; born in Saluria, Ala., in 1888; Atlanta School of Medicine, Atlanta, Ga., 1915; interned at Duval County Hospital, Jacksonville, and served a residency at St. Luke's Hospital, Jacksonville, where he was assistant superintendent from 1917 to 1918; headed the first venereal disease clinic in Florida at Jacksonville and continued in private practice there from 1918 to 1938; practiced in Archer thereafter and served as mayor and municipal judge in 1946; was a member of the Alachua County Medical Society and the American Medical Association; died August 3, aged 73, after a lengthy illness.

Jones, Oliver Lee, West Palm Beach; born in Essex County, Virginia, on Aug. 16, 1900; Medical College of Virginia, Richmond, 1927; interned at Lewis-Gale Hospital, Roanoke, Va., and at Norfolk General Hospital, Norfolk, Va.; served with the Veterans Administration during World War II; in 1946 entered general practice in West Palm Beach, where he had served as city physician since 1953 and for a time was part time county physician; was a member of the Palm Beach County Medical Society, the American Medical Association, the Southern Medical Association, the American Academy of General Practice and the American Geriatric Society; died June 20, aged 60.

Kendall, William Eugene, St. Petersburg; born in Mason City, Ill., in 1884; Chicago College of Medicine, Chicago, 1913; was a veteran of World Wars I and II; came to St. Petersburg from Chicago in 1939, where he engaged in the practice of internal medicine; was a member of the Pinellas County Medical Society and the American Medical Association and a life member of the American College of Physicians; died Nov. 17, 1960, aged 76.

Kinzie, Joseph Lee, Lake Wales; born in Roanoke, Va., on Mar. 1, 1904; Medical College of Virginia, Richmond, 1933; practiced in Salem, Va., for 10 years; served as a captain in the Army during World War II; then located in Lake



Wales; was a member of the Polk County Medical Association and the American Medical Association, and a past president of the Medical staff of the Lake Wales Hospital; died February 10, aged 56.

Lawrence, Howard Foster, St. Petersburg; born in Falmouth, Mass., in 1882; New York University College of Medicine, 1904; served in the United States Navy for 38 years and was appointed captain in the Navy Medical Corps in 1931; was a veteran of World Wars I and II and also a medical officer in several Naval districts; came to St. Petersburg from Philadelphia in 1949 and engaged in the practice of dermatology; was a member of the Pinellas County Medical Society and the American Medical Association and was certified by the American Board of Dermatology; died August 26, aged 79.

Montgomery, Kenneth E., West Palm Beach; born in 1892; Louisville Medical College, Louisville, Ky., 1917; served overseas as an officer in the Medical Corps of the United States Army in World War I; was a member of the American Urological Association for 35 years and practiced his specialty in West Palm Beach from 1935 until his retirement; was a member of the Palm Beach County Medical Society and the American Medical Association; died Sept. 19, 1960, aged 68, following a long illness.

Rothrock, David R., Miami; born in Milton, Pa., on Mar. 24, 1920; Hahnemann Medical College, Philadelphia, and was graduated from The College of Physicians and Surgeons, Boston, 1945; interned at Vassar Brothers Hospital, Poughkeepsie, N. Y., and served a two year residency in psychiatry at Harlem Valley State Hospital, Wingdale, N. Y.; was staff psychiatrist at Chattahoochee State Hospital from 1947 to 1952; then entered the United States Army serving for two years as a captain at Brooke General Hospital in Texas and later in Puerto Rico; thereafter specialized in general medicine with a subspecialty of psychiatry and neurology and was staff physician at the Miami Sanitarium; held membership in the American Medical Association and the American Psychiatric Association; died July 10, aged 42, following a heart attack.

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Sasso, Robert Michael, Lake City; born in Mount Vernon, N. Y., May 21, 1913; Georgetown University School of Medicine, Washington, D. C., 1939; interned at St. Joseph's Hospital, Yonkers, N. Y.; entered the Veterans Administration Medical Service in 1941; served at the Veterans Hospital at Lake City during World War II with the rank of captain in the Medical Corps of the Army; entered private practice in Westchester, N. Y., after the war; later returned to the Veterans Administration service at the Veterans Hospital at Lake City during World War eventually engaged in private practice there; was a member and had served as an officer of the Columbia County Medical Society and several times served as a delegate or an alternate in the House of Delegates of the Florida Medical Association; held membership in the American Medical Association and the Suwannee River Valley Medical Society; was responsible for the Columbia County unit of the Northeast Florida Heart Association and was its first president; died September 11, aged 48, of a heart attack.

Sheldon, N. Alice Strahan, Darien, Conn.; born in Newark, N. J., in 1928; Cornell University Medical College, New York, 1954; engaged in the general practice of medicine in Miami; died May 2, aged 32, of accidental drowning at sea.

Sinnott, Richard F., Fort Pierce; born in Chicago in 1916; Stritch School of Medicine of Loyola University, Chicago, 1942; was a veteran of World War II, serving as a major in the Army Medical Corps in the South Pacific; had engaged in general practice in Fort Pierce since 1947; was a member and past president of the St. Lucie-Okeechobee-Martin County Medical Society and represented that society in the House of Delegates of the Florida Medical Association; was a member of the Florida Academy of General Practice and of its Board of Directors, and a member of the American Medical Association; died May 19, aged 45, of a heart attack.

Taylor, Willard Mitchell, Fort Lauderdale; born in Monroeville, Ind., Dec. 18, 1907; Indiana University School of Medicine, Indianapolis, 1940; interned at Methodist Hospital, Indianapolis; practiced in Crawfordsville, Ind., for 10 years before locating in Fort Lauderdale in 1952; was a member of the Broward County Medical

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Association, the American Medical Association and the American Academy of General Practice; died August 30, aged 53, of coronary thrombosis.

Trombley, Joseph Jerome Jr., Pompano Beach; born in Detroit, Mich., June 20, 1901; University of Michigan Medical School, Ann Arbor, 1925; interned at Harper Hospital and then spent two years as a junior associate before entering surgical practice in Detroit; entered general practice in Pompano Beach in 1957 and was active in the organization of North District Hospital; was a member of the Broward County Medical Association and the American Medical Association; died July 16, aged 60.

NEW MEMBERS

The following doctors have joined the State Association through their respective county medical Societies.

Active

Addington, William F., Cocoa Beach
Allison, Gordon G., Clewiston
Blank, Richard H., Tampa
Bourland, William L., Indialantic
Brewer, Harold D., Plant City
Crevasse, Lamar E. Jr., Gainesville
Ferber, Carl J., Fort Myers
Ferguson, Robert W., Fort Myers
Harris, Jeff W., Tampa
Kahana, Shirley E., Tampa
Lawyer, Howard A., Pensacola
Lipsey, John C., Pensacola
Newcomb, Thomas F., Gainesville
Panaro, Robert J., Pensacola
Polizo, Dimitri C., Pensacola
Pollock, Adrian Q., Fort Myers
Serrano, M. Edward, Brandon
Sharp, Thomas B. Jr., Pensacola
Shuttleworth, John G., Pensacola
Travis, David M., Gainesville
Williams, Robert L., Gainesville

Associate

Andersen, Thorkild W., Gainesville
Anderson, Richard M., Gainesville
Arean, Victor M., Gainesville
Aron, Jack D., Hollywood
Blalock, John C. Jr., Winter Park
Brede, Edward H. III, Fort Lauderdale
Clement, Stephen P. Jr., Sarasota
Coleman, Hyron E. (Col.), DeLand
Creighton, Francis S., Fort Lauderdale
Jelks, Allen N., Sarasota
Jelks, Mary L., Sarasota
Kaufman, Raymond E., Lake Worth
Keen, Ralph, West Palm Beach
Klorfein, Elliott H., Gainesville
Mosco, James A., Ormond Beach
Noble, Charles R., Orlando
Rushton, Francis E., Sarasota

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BOOK REVIEWS

Infectious Diseases of Children. *By Saul Krugman, M.D., and Robert Ward, M.D.* Ed. 2. Pp. 398. Illus. 55 with 7 color plates. Price $13.00. St. Louis, The C. V. Mosby Company, 1960.

The 31 chapters comprising this pediatric medical text have been syntactically arranged with the adroitness of masters in medical composition. The authors deserve commendation on the style simplicity yet thorough dexterity in scaffolding the construction of this scalene subject. Advertence to the virus has been responsible for many "modern" texts being shelved into a depository for relics. The authors, cognizant of such, felt the necessity of a second edition in order that the student be versed in the rapidly changing world of children's infectious diseases. Not only have the writers been appraisers of the virgin viral infections, but also have repatterned the antiquated bastard bacterial diseases. The exanthemata in this volume are presented comparatively with schematic drawings and graphs which should be most pleasing to the reader. Diseases of rickettsial origin are discussed in detail, but for the sake of simplification in distinguishing the disease characteristics they are placed in table form. A short but attractive chapter is dedicated to rabies. This rather rare but important emergency is little understood by the lay people, and so a knowledge of its management is worth the chapter. Acute respiratory infections can be confusing, and the question usually is "to treat or not to treat." The chapter apportioned to these maladies will assist the reader in organizing his thoughts as well as his armaments of therapeusis. Summarily, the publication is elegantly terse, unquestionably instructive, and it is recommended to those interested in diseases of childhood.

Clifford C. Snyder, M.D.

Ciba Foundation Symposium on Haemopoiesis: *Cell Production and its Regulation.* Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maeve O'Connor, B.A. Pp. 490. Illus. 107. Price, $11.00. Boston, Little, Brown and Company, 1960.

This volume of the important Ciba Foundation series contains 16 interesting papers and the even more interesting discussions upon them presented by 27 research workers in the field of hematology in February 1960 at a conference held at the suggestion of Prof. J. M. Yoffey, "who thought that quantitative aspects of blood cell production could profitably be discussed by experts in hemopoiesis, however many other hematological conferences might have been held in recent years." Every known aspect of hemopoiesis was studied from all possible angles, and the papers carried extensive bibliographic reference lists. The discussions were so lively as to border at times on the emotional and the differences of opinion among the scientists were very strong and definite in many instances, particularly in the various discussions over the possibility of an "initial" stem cell being an immature large lymphocyte. This was called by Professor Yoffey ". . . perhaps the most exciting detective story in the whole of modern cytology." He related how at a previous scientific meeting he "did literally see one anatomist foam at the mouth when it was suggested that the lymphocyte was not a multipotential cell."

And who said scientists are cold fish?

Carlos P. Lamar, M.D.

Ciba Foundation Symposium on Congenital Malformations. Editors for the Ciba Foundation, G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Cecilia M. O'Connor, B.Sc. Pp. 308. Illus. 91. Price $9.00. Boston, Little, Brown and Company, 1960.

This symposium, as others sponsored by the Ciba Foundation, is the usual excellent presentation dedicated

(Continued on page 587)

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(Continued from page 582)

to a single problem. In this instance the subject material centers around congenital malformations. It is the same aged question, "What in the world caused such a thing—was it I—something I did or did not do?" Every physician hears this interrogation many times in his practice. Twenty-nine intensely interested scientists gathered to spread new light upon this commonly discussed topic of teratology. Statistics are illustrated. The malformations were approached from chromosomal abnormality, environmental factors, tumor-forming chemicals, antibiotics, proteins, diseases, irradiation, and various other possible etiological factors. Almost all the contributors referred to three interesting viewpoints: the multiplicity of agents that may produce congenital anomalies, the importance of when the particular agent is introduced and the susceptibility of early embryonic tissue to a particular noxious agent. Of interest are the role of maternal age and the frequency of mongols born to older women. Question is placed as to what importance is the placenta to this teratological phenomenon. The abstracter was stimulated by the review and suggests it as good reading for all the men in our medical field.

Clifford C. Snyder, M.D.

Handbook of Medical Treatment. By Milton J. Chatton, M.D., Sheldon Margen, M.A., M.D., and Henry Brainerd, M.D. Ed. 7. Pp. 572. Price, $3.50. Los Altos, Calif., Lange Medical Publications, 1960.

Since the appearance of the first edition of this practical handbook in 1949, with successive revisions every two years, it has been a highly popular quick reference manual for senior medical students and interns. Many have kept in the habit of carrying the book in their medical bags and refer to it often in the course of their practice. Compact and concise, it provides valuable starting information for the handling of practically every possible medical emergency. It helps to refresh old stored information when the doctor is faced with unusual situations until more detailed and complete data may be obtained from more specialized texts. It is full of valuable tables, and the outlines of treatment procedures are clear and up-to-date. This seventh edition contains illustrations of the Arm-Lift-Back-Pressure method of artificial respiration which makes it easy to understand and apply the procedure even without previous experience. All the most recent therapeutic methods and drugs that have proved their value are described. This is a valuable book to keep always at hand.

Carlos P. Lamar, M.D.

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